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Textile World

JANUARY, 1956

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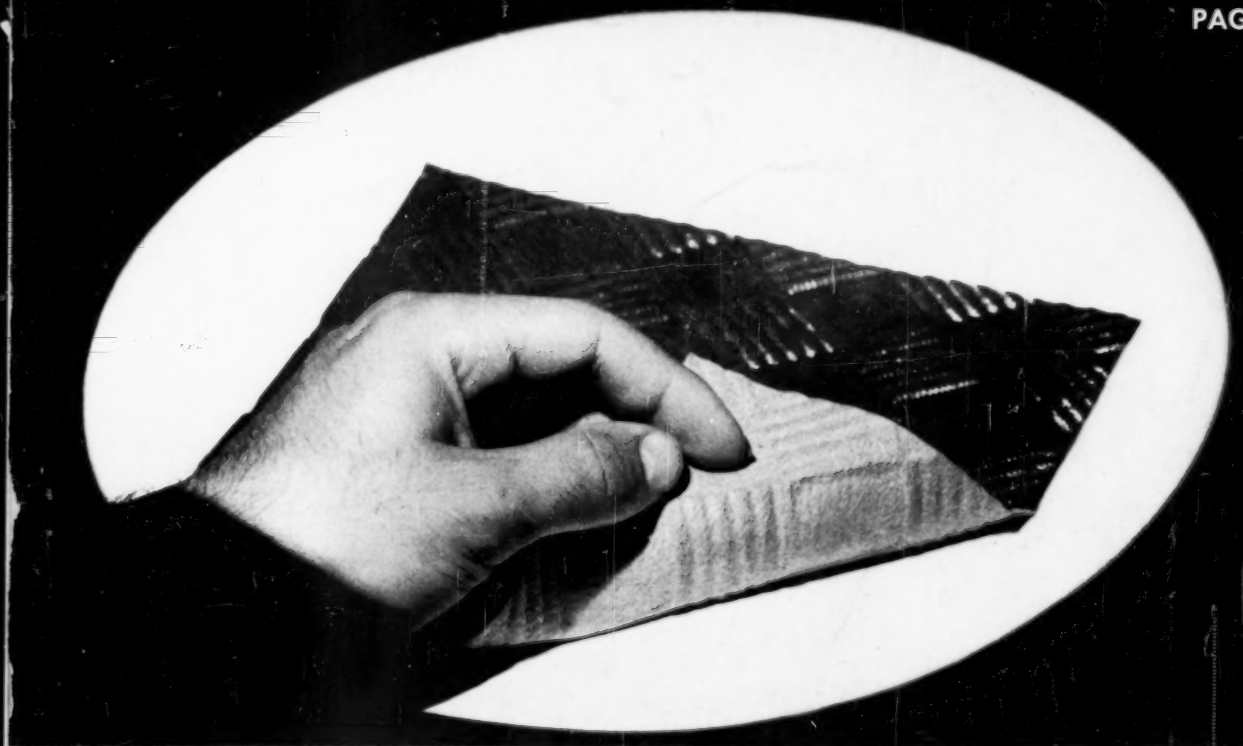

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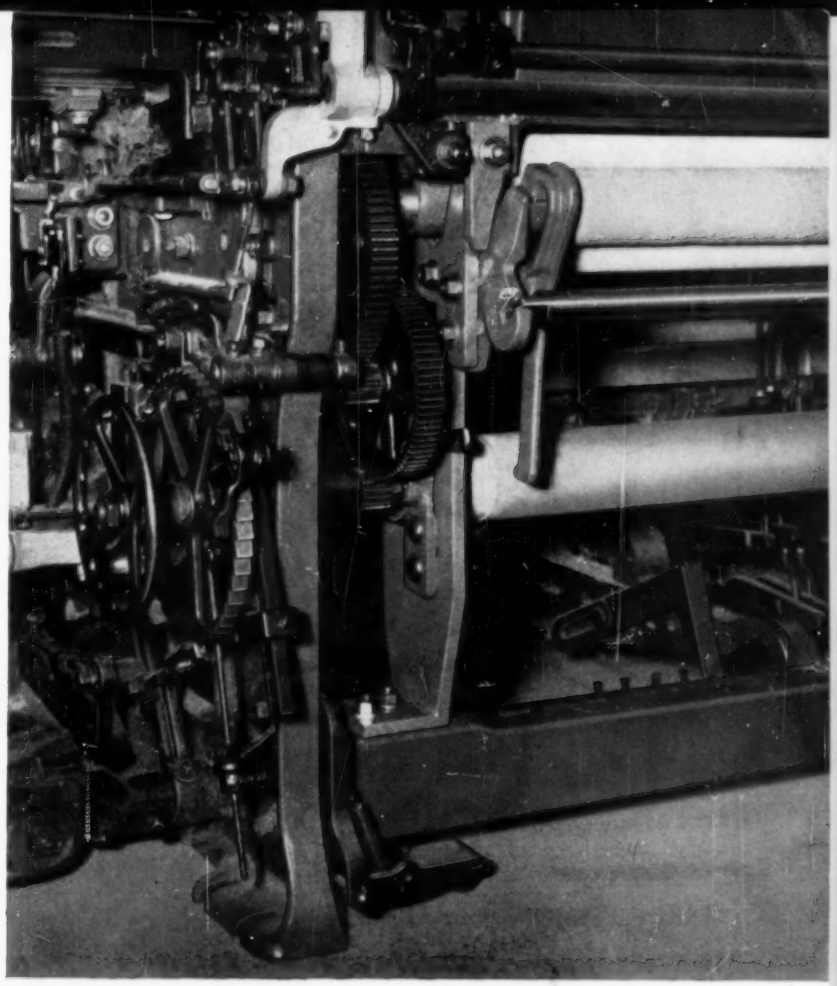

New Draper High Roll Ratchet Take-Ups now make it possible to weave synthetic goods on X-2 Model Looms.

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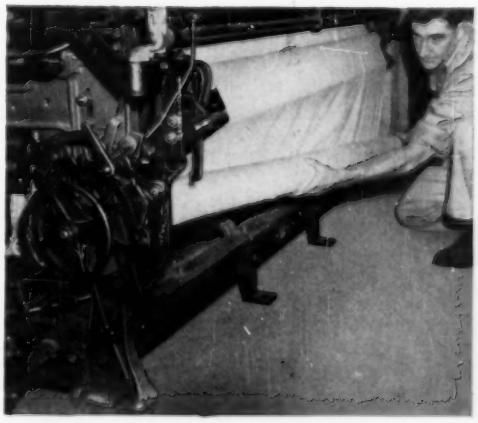

New type Pressure Roll permits doffing without stopping the loom.

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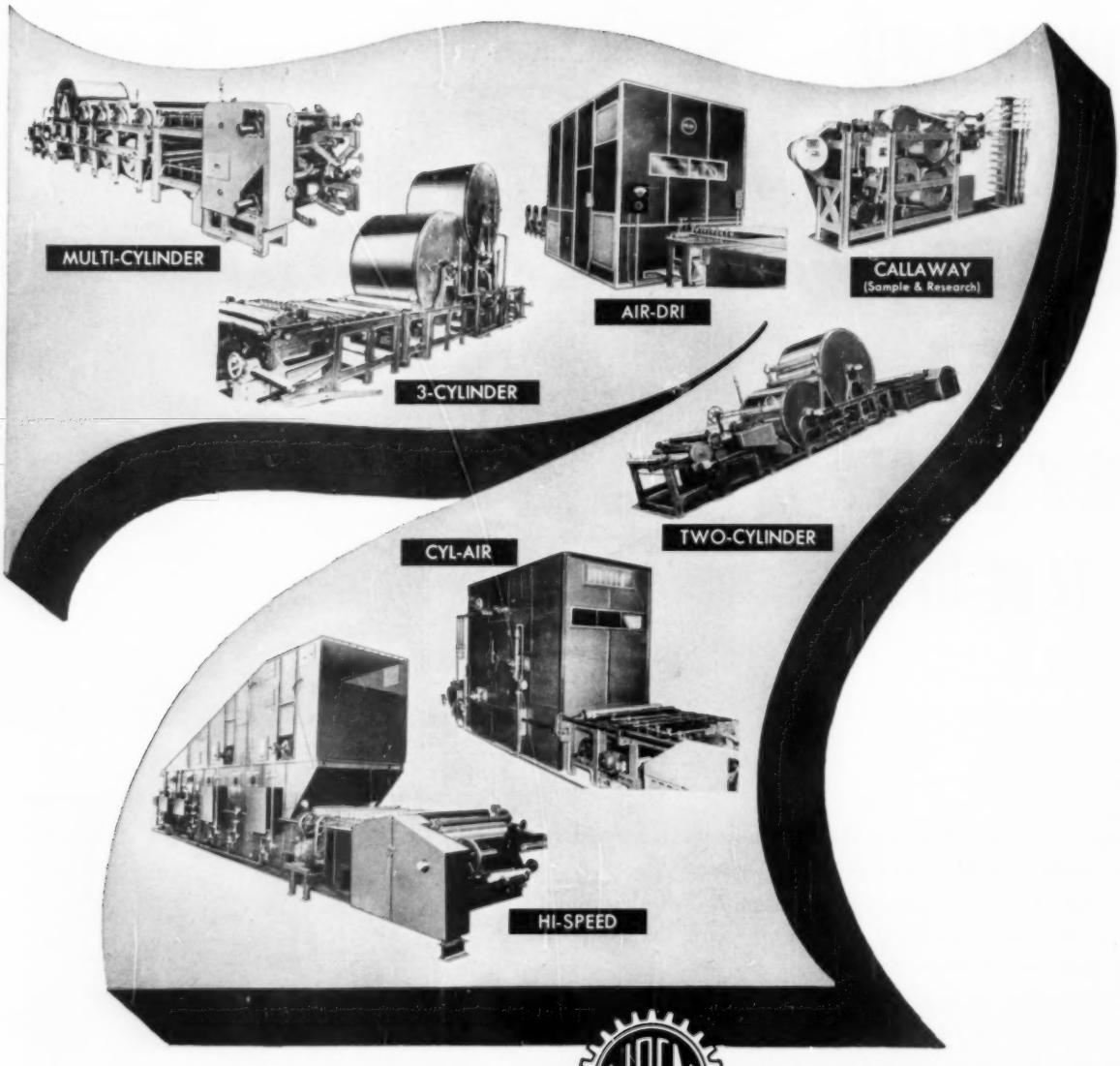

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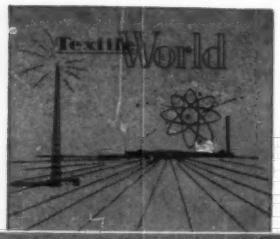

Developments To Watch

TWO-PRICE COTTON . . . looks inevitable. Japan is asking for 100,000 bales of cotton in 1956 at lower than domestic prices. Other countries will follow suit if they think there's a chance of buying cheaper cotton.

The 11-million-bale surplus is inspiring congressmen to speak up for a world price on exports. Cotton and wheat interests are plugging to sell surpluses at world prices.

What will happen if two prices are placed on cotton? Foreign goods, already cheap because of low labor costs, will become even cheaper—and our domestic textile markets will be hit harder. If the government makes cheaper cotton available to foreign textile manufacturers, it seems that the only hope for U. S. mills is an import quota for foreign textiles.

KNITTED FABRICS . . . with the stability of woven fabrics have been the dream of the circular knitter for many years. Experiments are being made to stabilize knitted fabrics by knitting high-shrinkage yarns with a tight stitch and then closing up the stitch with heat and chemical treatment. A 96-feed knitting machine produces 100 yds. of fabric per hour. If the experiments are successful, this fabric could be used for tarpaulins, tire fabrics, tents, and ticking.

WOOL IN SOUTH CAROLINA . . . will bring "a fantastic snowball of industry" to the South, says Jack M. Willis, secretary of the New York Wool Traders Assn.

In 1954, the Port of Charleston handled 45,000 bales of imported wool to supply South Carolina's two wool-combing plants. This year, 100,000 bales should move through Charleston.

"Two of the three major wool-combing companies in the United States already are in South Carolina. Even should the third fail to establish itself here, South Carolina already has become a major factor in the wool-combing business," Willis points out. Spinning mills will follow the combing plants and knitting mills the spinning mills.

WARP-END BREAKAGE . . . may soon be predetermined before you put a warp in a loom. Already, tests have isolated breaks resulting from slasher-size formulas. At a recent meting of American Society of Mechanical Engineers, Textile Div., in Atlanta, Ga., Drs. R. P. Ramirez and J. P. Vidosic, of Georgia Tech, gave the results of tests they have made to determine the weavability of yarns sized with various sizing formulas.

The tests were made on a warp-yarn abrader that incorporates as nearly as practicable the abrasive actions of a loom. Up to 25% of warp breaks at the loom can be attributed to yarn-sizing breaks. A continuation of the tests may enable mills to change sizing formulas for the fewest possible loom stops. And there's no reason why other types of warp breaks can't be isolated.

DENIM WILL SUFFER . . . further losses of markets as boys continue their present swing away from blue jeans to dress-up clothes. Shocked last year by the loss of the sportswear market, riffled early this year when tomboys took to Bermuda shorts and whatnots instead of jeans, the once-lush denim market is now really gasping as the so-far-faithful young lads turn Fauntleroy. Worsted flannels and gabardines and washable twills are the go for pants and suits, washable fabrics (no flannel) for shirts, and sweaters.

IMPORTERS OF JAP GOODS . . . will take a more-careful look at the U. S. textile-market plum from now on. Three blouse manufacturers were recently fined $60,000 by the impartial chairman of the New York women's neckwear industry for importing Japanese blouses. The fines were ordered paid to the International Ladies Garment Workers' Union.

The ILGWU, long an advocate of lower tariffs to promote "international goodwill," is now screaming its head off against Japanese imports. The blouse manufacturers, charged with violating a labor-management contract that requires all blouses to be made in union shops, probably will fight the case in the courts.

BIG LABOR DRIVE . . . for 1956 will be the big textile chains. The union hopes for a campaign kitty of $15-million. Jack Livingston, of the CIO auto workers' union, is reported being brought in to head up the drive.

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ANNOUNCING THE NEW TURBO AD-96

Combination Preboarder and Finish Boarder

The new Turbo machine carries all the newest four cycle features, timed pre-heating and pre-conditioning of boards, timed solenoid controlled air expulsion, timed temperature controlled steaming cycle, timed air drying cycle, plus increased economies in steam consumption and shorter processing and drying time.

The AD-96 is a two operator machine with a double row of forms mounted on the collapsible conveyors, and if used on the one-boarding operation principle the AD-96 really replaces four machines (two preboarders and two finish boarders).

The AD-96 used for preboarding or finish boarding, separately, doubles the production of previous models, yet sacrifices none of the famous Turbo quality.

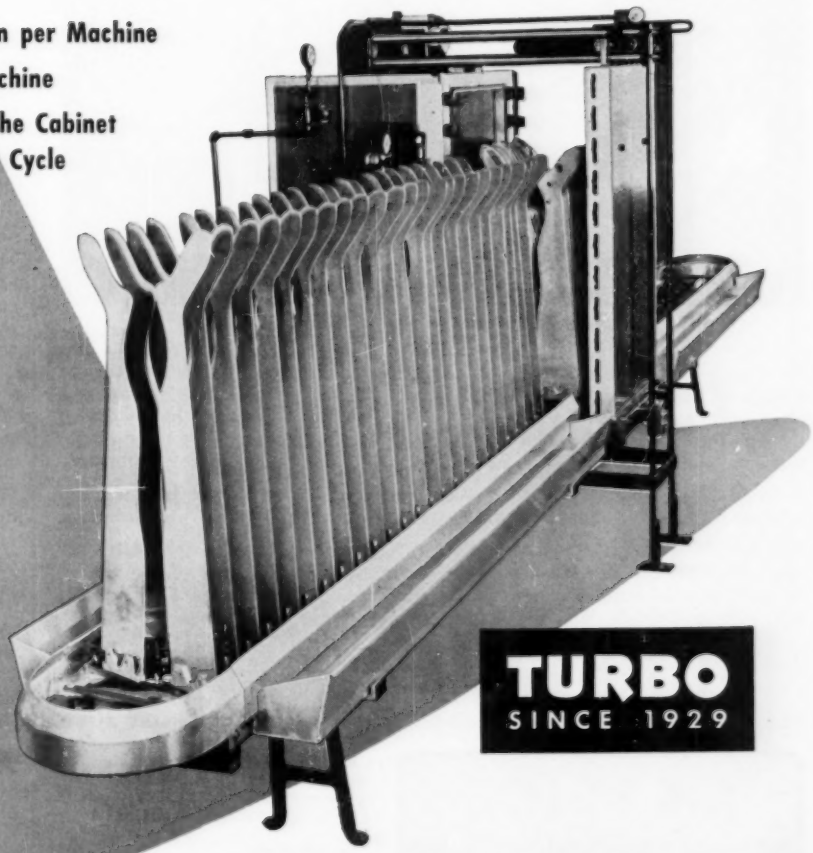
Built on the "Gentle as a Lamb" principle for quality, this new equipment offers quantity preboarding and finish boarding where floor space is at a premium.

Full details are yours for the asking — get in touch with Turbo today.

Double Production per Machine

96 Forms per Machine

48 Stockings in the Cabinet per Processing Cycle



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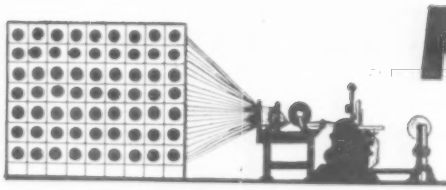
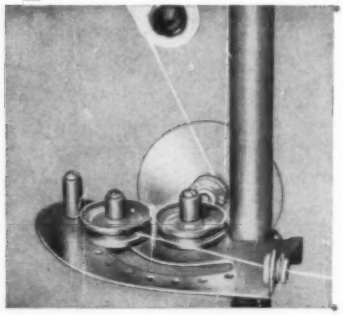
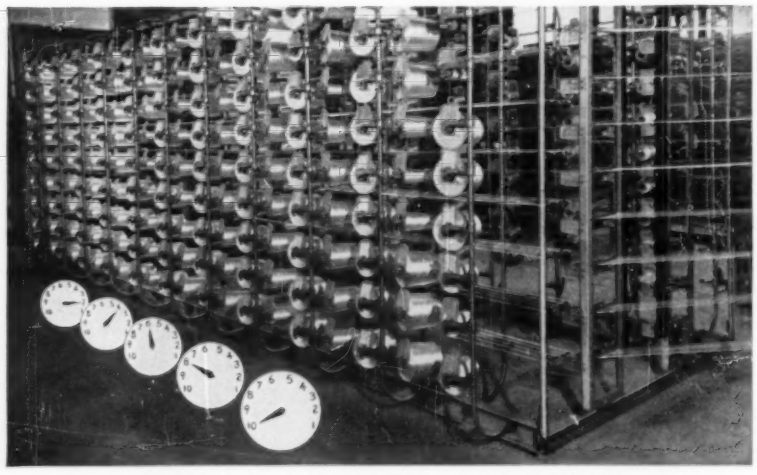


McBRIDE CREEL CORNER



AT LAST— YOUR YARN TENSION CAN NOW BE EVENIZED AT THE BEAM

McBride Tension-Master



Note how settings change to evenize yarn tension at the beam.

Warping of light yarns such as 15 denier nylon requires special attention to tension settings. Yarn originating at the front of the creel will have 5 to 7 grams less tension per end than will yarn starting at the rear of the creel that has passed through the intermediate guides. This tension variation must be evenized at the beam for better warping and better fabrics.

McBride Tension-Master provides a wide range of settings to evenize the warp tension. Visual control is simplified because a glance checks an entire row of units.

The Tension-Master is standard on all McBride creels and is available with anti-snarl, transparent, plexi-glass shield. Greater ranges of tension are possible by adding flat, steel, washer-type weights to the tension discs. Discs are available in mirror or satin finishes and in weights from 15 to 170 grains.

CREELS *for every purpose,* CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS.

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DEVELOPMENTS TO WATCH

PINK SOCKS . . . are definitely out of the market picture next summer. Mills with stocks of pink socks are redyeing them black and charcoal gray. Socks with splashes of red will outsell all other socks. New pastel shades, such as bamboo, moss green, and ice blue, will make up about 20% of the market.

SUPIMA . . . the tradename for Pima S-1 cotton, will make its appearance in summer fabrics for 1956. Plans are being made to use Supima in the manufacture of men's dress and sport shirts, pajamas, rain coats, and children's clothes. More than 45,000 bales of the cotton were harvested in 1955, and a larger crop is anticipated for 1956.

SLOWDOWNS AND WALKOUTS . . . to exert pressure on management during collective-bargaining negotiations will pop up more and more in the future. A recent ruling by a U. S. Court of Appeals reversed a National Labor Relations Board order directing the Textile Workers' Union of America to stop using such tactics while bargaining with a Chicago manufacturer of surgical dressings.

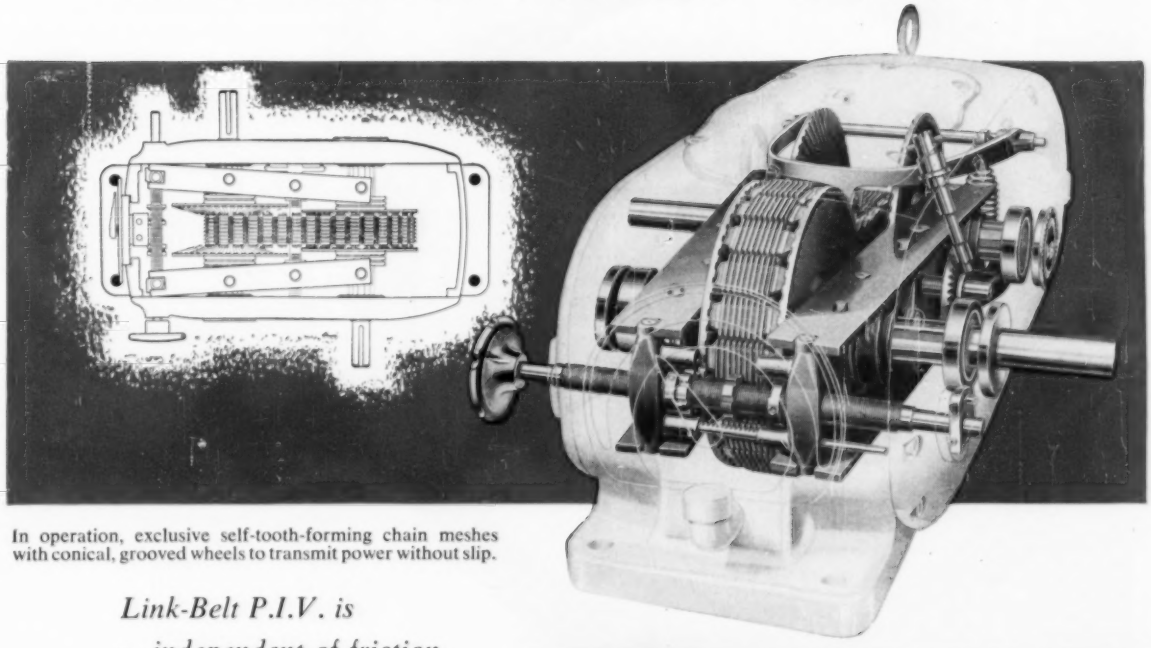
TUFTED DRAPERIES . . . will reach the market shortly. These items, rich-looking and relatively inexpensive, could well open up a vast new outlet for textiles. Two-color effects are being achieved by using tufting and base fabrics of different colors; alternate bands of tufting and uncovered base fabric produce the pattern.

TAILORABILITY . . . the intrinsic characteristics that determine shaping limitations of a fabric, will become more important to mills in the future. To sell top markets, mills may have to give more attention to fabric stability, resiliency, pliability, shape retention, fusion, and compressibility. These factors, according to the Fashion Institute of Technology, are becoming more important all the time in the selection of fabrics for high-style garments.

SOCKS AND KNEE-LENGTH HOSE . . . are now being made with hand-tied cable patterns by Esquire Socks. The hand-tying of a links-links pattern in the center panel creates a three-dimensional effect. The

Looking for the accurate mechanical variable speed drive?

IT'S LINK-BELT P. I. V.



In operation, exclusive self-tooth-forming chain meshes with conical, grooved wheels to transmit power without slip.

Link-Belt P.I.V. is

- *independent of friction*
- *all metal*
- *fully enclosed*
- *automatically lubricated*

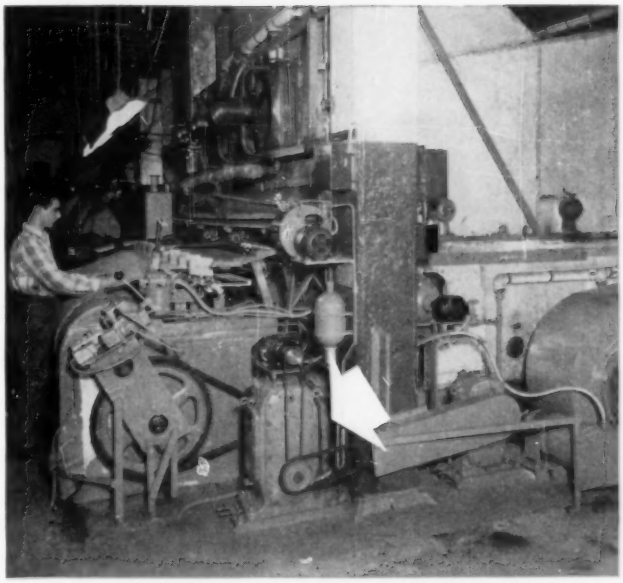
Here is the Positive, Infinitely Variable speed drive that's not dependent on friction for transmitting power. Instead, its exclusive drive chain with self-forming metal teeth engage with radial grooves in two pairs of cone-shaped wheels. Positive power transmission is assured at all speeds regardless of load.

Movement of the single control screw simultaneously varies effective diameters of wheels on input and output shafts. This makes possible an infinite number of stepless speed adjustments within the range of the drive. Speed of the output shaft can be changed instantly, even while operating under full load.

Link-Belt P.I.V. drives are available in capacities from ½ to 25 hp . . . in 8 sizes and 16 types for horizontal and vertical mounting. See your nearest Link-Belt office or authorized stock-carrying distributor, and write for Book 2274.

P.I.V. LINK-BELT

VARIABLE SPEED DRIVE



On jute slasher, Link-Belt P.I.V. Variable Speed Drive with electronic control automatically regulates the speed of winding ends onto the beam by control of the moisture content of the material and the accumulating diameter of the wound beam.

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MODERN DYEHOUSE EQUIPMENT

THE DEPENDABLE KWG SKEIN DYEING MACHINE

KWG Double Reel Skein Dyeing Machine —all stainless steel unit built in capacities to 1000 pounds.

FOR QUALITY DYEING
WITHIN INCREASED BUT MORE NORMAL TEMPERATURE and PRESSURE LIMITS

Perfection in dyeing—for natural and the new synthetic fibers—is yours with KWG Skein Dyeing machines. Rugged construction . . . improved 'Ferrous-Wheel' performance . . . give you the penetration and evenness of color—the permanence of tone—for that extra measure of sales appeal—without concern for costly high-temperature, high-pressure methods. Dual-operations possible including scouring, dyeing and shrink-proofing, or scouring, bottom bleaching and dyeing of pastel shades.

You can point the way to extra sales . . . extra profits . . . today by writing Klauder Weldon Giles. A KWG representative will be glad to survey your needs. If necessary, he'll design special equipment to your specifications. There's no obligation.

Klauder Weldon Giles MACHINE COMPANY
ADAMS AVENUE & LEIPER STREET • PHILADELPHIA 24, PA.

DEVELOPMENTS TO WATCH

popularity of links-links patterns subsided with the introduction of stretch socks. This development might bring links-links effects back into prominence.

UNION CAMPAIGNING . . . on company time will be less obvious in the future. A National Labor Relations Board trial examiner, in a case involving Avondale Mills and the Textile Workers' Union of America, recently ruled that management can forbid such practices.

FEATHERWEIGHT SUITINGS . . . lighter than any conventional summer-wear fabrics so far, may be on the market this summer if experiments in mills are successful. High-bulk yarns now available give good cover qualities with less weight. Fabrics that are extra light in weight are to be woven from blends of wool with fibers such as Orlon, Acrilan, and Dacron. Manufacturing principles similar to those used for high-bulk sweaters will be used. If the new fabrics prove successful, the result will be lighter, cooler summer suitings.

RAYON TIRE CORD . . . may recapture part of the market it has lost to nylon. A new super-super-super high-tenacity rayon, soon to become available, will have the strength of nylon and the advantage of lower price. It seems that the old grandaddy of today's robust young synthetic fibers just won't lie down and cry uncle.

CARPET MANUFACTURERS . . . will get their share of American industry's "hush money" if the Carpet Institute's promotion campaign succeeds. With U. S. industry spending $100-million a year to give its workers peace and quiet, the Carpet Institute is waging an aggressive campaign pointing out carpets and rugs as the best noise reducer available for floors.

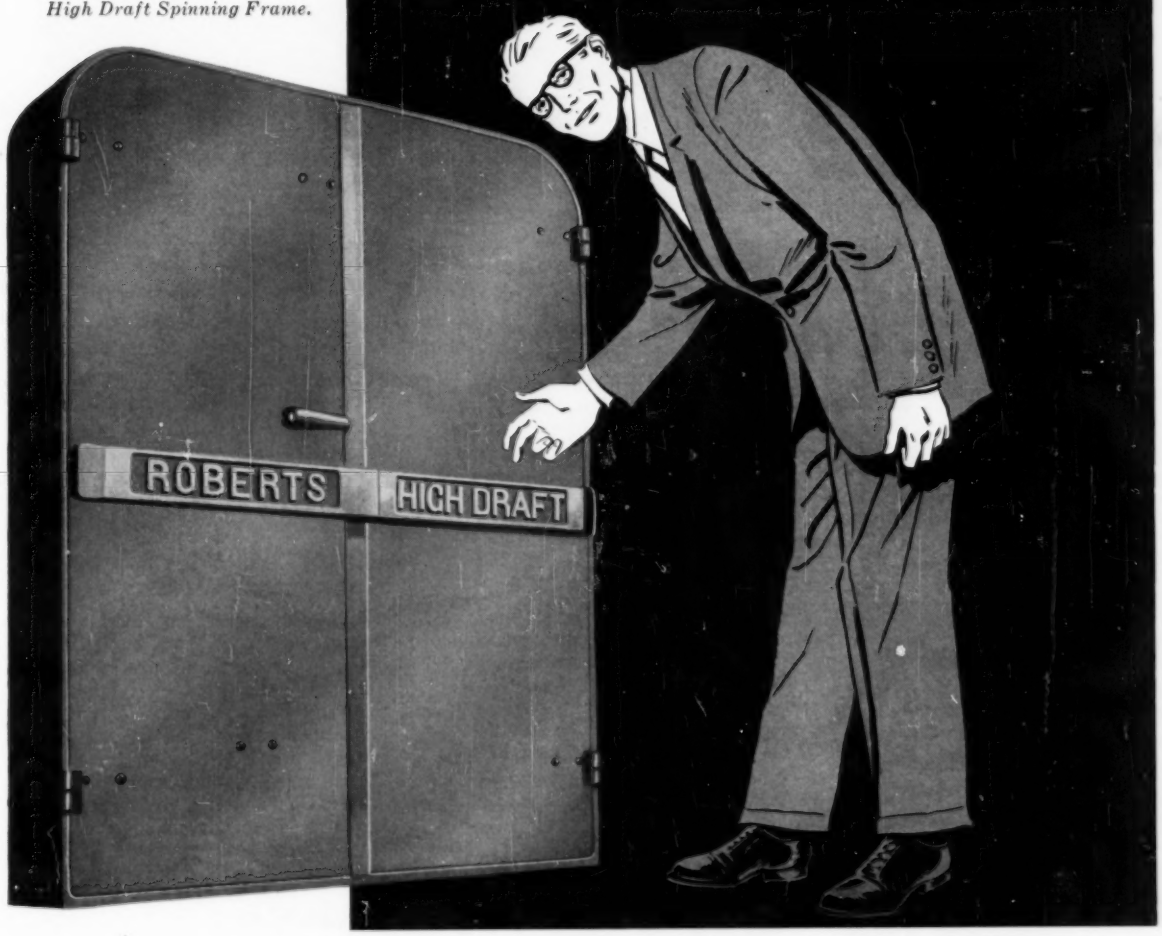
The institute represents two dozen U. S. rug and carpet manufacturers.

TEXTILE SALES . . . are expected to increase 9% in 1956, according to a preliminary survey by the McGraw-Hill Department of Economics, but capital spending will be only 10% greater. The expected sales increase is well above the 7% average for all industries.

For more information, write direct or use Reader-Service post card.

OPEN THESE DOORS TO SPINNING PROFITS

Shown below is head end of Roberts Model 55R High Draft Spinning Frame.



AVAILABLE IN THE FOLLOWING FORMS:

- *Partial or complete changeovers on mill's existing frames.*
- *Completely modernized Model 55R Roberts High Draft Spinning in 3", 3¼", 3½" or 4" gauge.*
- *All-new Model 56 Roberts High Draft Spinning Frames.*

- **LARGER ROVING PACKAGES IN CREELS**
- **LONGER LIFTS ON BOBBINS**
- **LARGER RING SIZES**
- **HIGHER DRAFTS**
- **HIGHER FRONT ROLL SPEEDS**
- **REDUCED ROLL PICKING**
- **LOWER OILING COSTS**
- **GREATER BREAKING STRENGTHS**
- **BETTER YARN EVENNESS**
- **REDUCED ENDS DOWN**
- **INCREASED SPINDLES PER OPERATOR**

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

For more information, write direct or use Reader-Service post card.

NEW...Sales-winning TEXTILE PACKAGING

for better protection, better economy, better buyer-acceptance...

EASY AUTOMATIC OPERATION

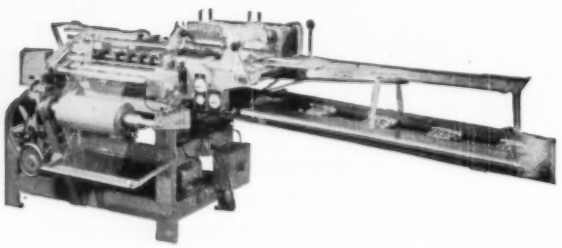
Regardless of size or shape, you get a neat, tight, perfect-register wrap on every package with a Hayssen automatic wrapping machine. Also, production men report savings up to 80% over previous wrapping costs.

FASTER, SIMPLE TO CHANGE SIZE

No complicated adjustments from size-to-size on a Hayssen. No gears or sprockets to remove or change... no need for expensive mechanics to change size, either. So simple the operator does it on the job.

COSTS LESS, DURABLY BUILT

Hayssen's simple, rugged design, using fewer moving parts, keeps these machines working and saving through years of dependable, trouble-free service. Both the cost of the machine and the maintenance are so low you won't believe it.



Let our Packaging Engineers help you with your packaging problems... WRITE US TODAY for further details.

Hayssen MFG. COMPANY

Since 1910, Manufacturers exclusively of automatic wrapping and packaging machines.

Dept. TW-1, SHEBOYGAN, WISCONSIN

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Letters From Readers

What's on your mind?

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD, 330 W. 42nd St., New York 36, N. Y.

HANDY REFERENCE FILE

Dear Editor:

For quick access to useful textile information, I cut out the table of contents (page 3) of my issues of TEXTILE WORLD and file them separately. Whenever I want to read up on a certain subject, all I have to do is check this file, pick out the issues I need, and take them from the rack.

Here's a suggestion. Why not perforate the inside margin of the contents page so I can get it out quicker and cleaner than by cutting?

GUSTAV R. FRIED

Rio Grande, Brazil

[For a handy reference to articles published in TW last year, see the 1955 index at the back of this issue.—EDITOR]

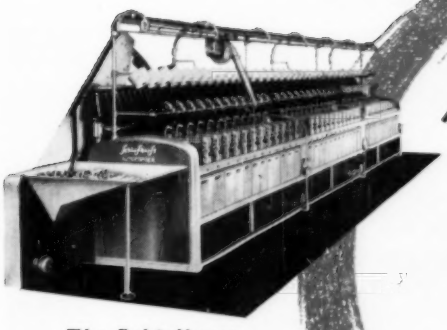
SELECTING YARNS FOR KNITTING

Dear Editor:

I have in front of me your Mid-September Fact File. Like every other copy of your publication, it is packed with useful and interesting matter that I carefully preserve in my own fact-filing system.

This time, however, I feel obliged as a tricot knitter to offer a few words

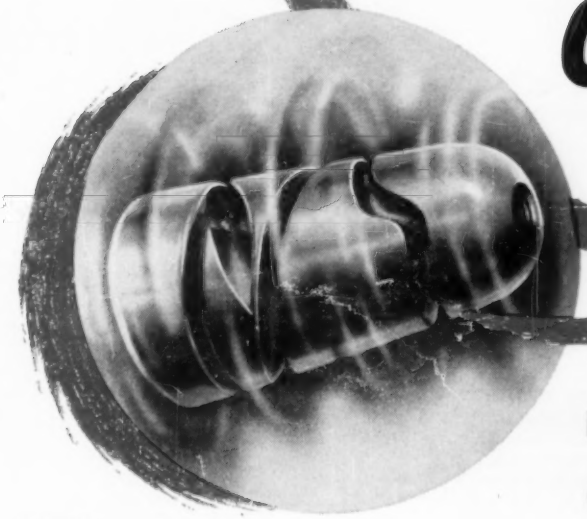
CONTINUED ON PAGE 200



The Schlafhorst Autocopser

Autocopser's Exclusive

ROTARY YARN GUIDE



SPEED = *lower investment cost*

SPEED = *higher production*

SPEED + *rotary yarn guide* = *no yarn guide wear*

SPEED + *yarn guide design* = *no yarn damage*

SPEED + *quilling know-how* = *superior filling quality*

makes continuous quilling speeds of 10,500 - 12,000 R. P. M. an actual daily performance in hundreds of mills!

Schlafhorst

AUTOCOPSER

First Name in Automatic Quillers the World Over

Sold and Serviced By

THE TERRELL MACHINE COMPANY, INC., 3000 S. BLVD., CHARLOTTE, N. C.

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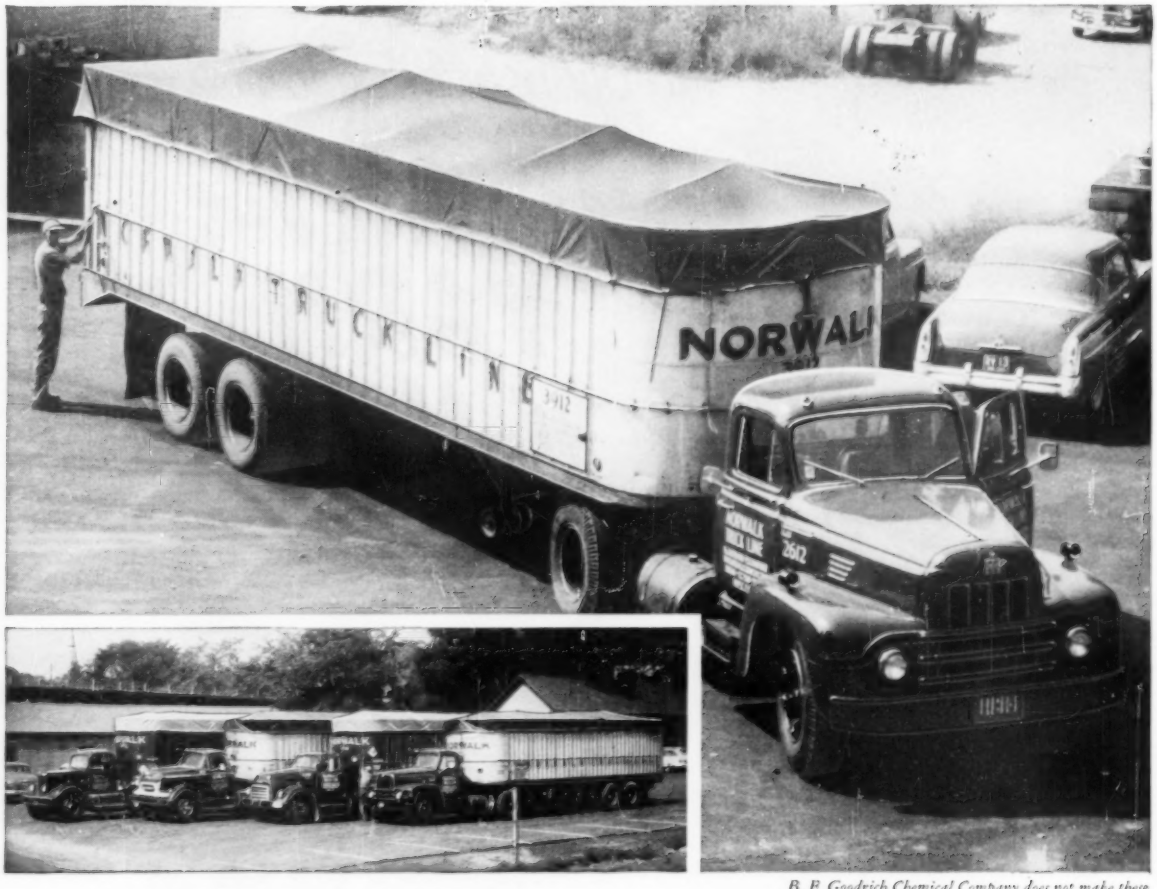
Another new development using

B. F. Goodrich Chemical *raw materials*



B. F. Goodrich Chemical Company does not make these tarpaulins. We supply only the Geon vinyl resin.

Lighter Tarp is tops with truckers

"MAKE it light," said truckers, "and you'll solve one of our big tarpaulin problems."

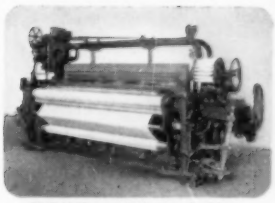
Conventional tarpaulins for open top trucks are heavy, hard to manage and not completely weatherproof. A manufacturer familiar with the versatile properties of Geon polyvinyl materials knew the answer to this problem. He coated tough nylon fabric with a plastisol based on Geon paste resin and produced a lighter, weather resistant tarpaulin that also resists the effects of grease, oil and mildew. No sewing is necessary—it's all electronically sealed.

Color is another bonus for the trucker. The Geon coating in bright colors reflects oncoming headlights for greater safety in night driving. It is also translucent, allowing daylight loading without artificial light.

This Geon coated tarpaulin may give you an idea for a new product, or increase the sales appeal of a present one. Geon materials cover a wide range of profitable uses from wire insulation to rigid pipe, foam, flooring, and many others. To find out more about specific advantages that Geon may offer your own operation, please write Dept. DV-1, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

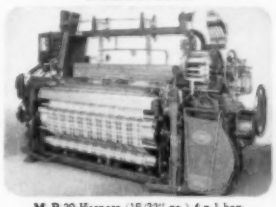
GEON RESINS • GOOD-RITE PLASTICIZERS . . . the ideal team to make products easier, better and more saleable.

GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors

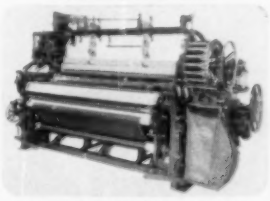


M-P 20 Harness (1⅝" space) 2 x 1 box
AUTOMATIC FILLING MIXING HEAD LOOM

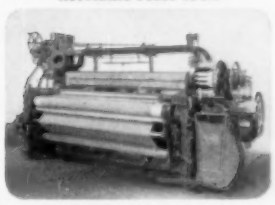
M-P 4 Harness 2 x 1 box AUTOMATIC
UNDERCAM LOOM



M-P 20 Harness (15/32" ga.) 4 x 1 box
AUTOMATIC DOBBY LOOM



M-P 20 Harness (15/32" ga.) 2 x 1 box
AUTOMATIC DOBBY LOOM



M-P 25 Harness (4/10" space) 4 x 1 box
AUTOMATIC HEAD LOOM

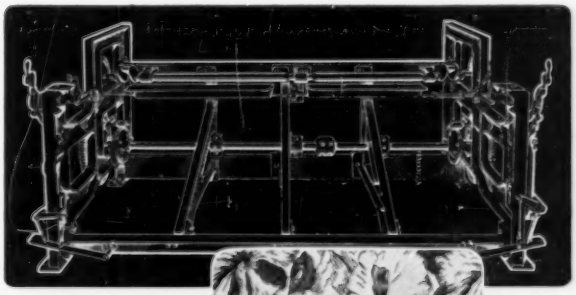
YOUR FABRIC-CONSTRUCTIONS CAN BE "*TURNED ON A DIME*", TOO...

WHEN YOUR WEAVEROOM IS M-P EQUIPPED

Sudden turns of fashion can't throw your balance-sheet off balance . . . when your weaveroom has the **M**any-sided **P**rotection of C & K's new **M**ulti-**P**urpose Looms.

For, with an adequate complement of these unique looms, you can literally "turn on a dime" . . . *convert overnight from plain to fancy constructions, or vice versa.*

C & K's new M-P design is the first to give this *complete convertibility* . . . which means **More Protection** and **More Profit** than you have ever had before. *See C & K today.*



This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are WOVEN Fabrics.

CROMPTON & KNOWLES *Loom works*

WORCESTER 1, MASSACHUSETTS, U. S. A.

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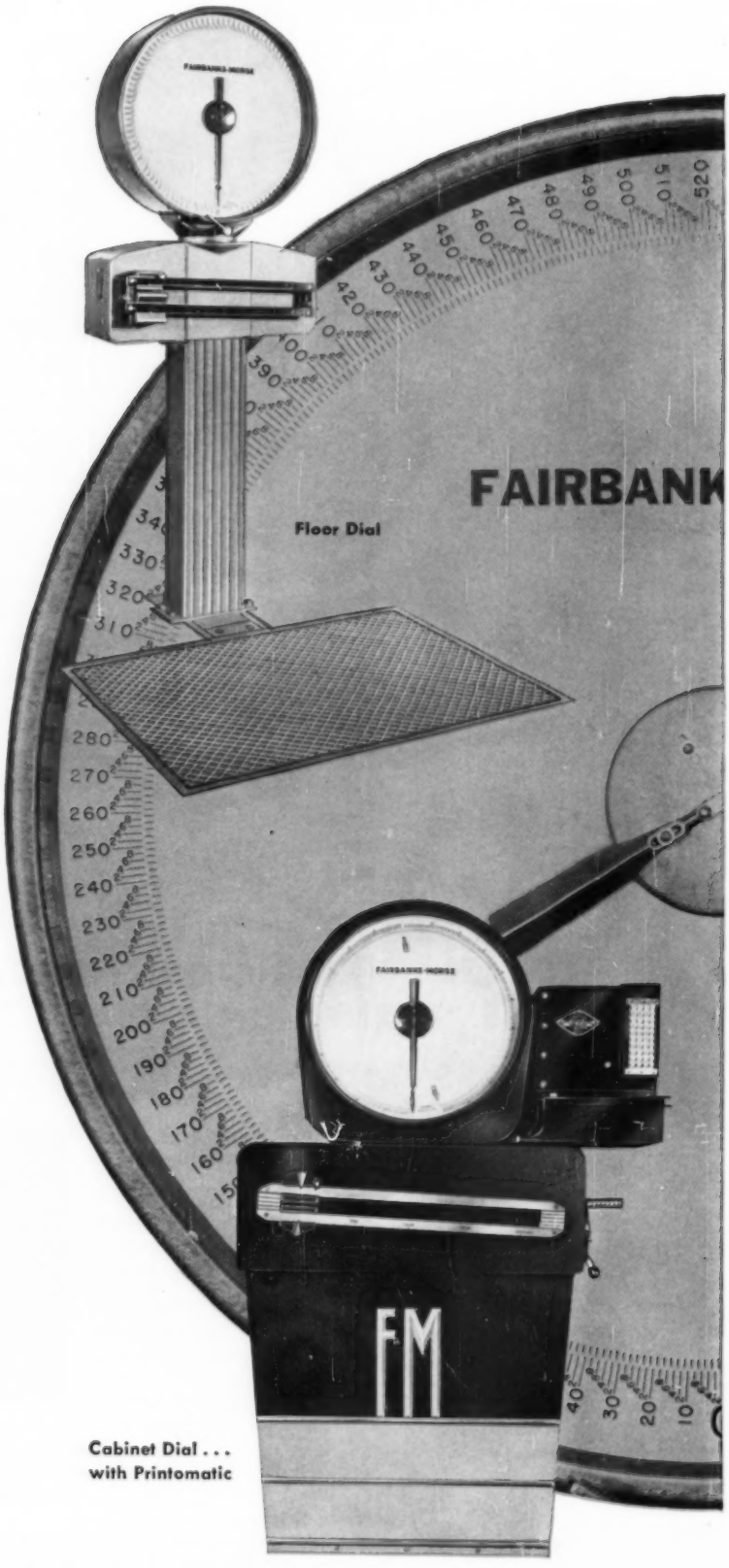
announcing:



Cabinet Dial . . .
with Printomatic

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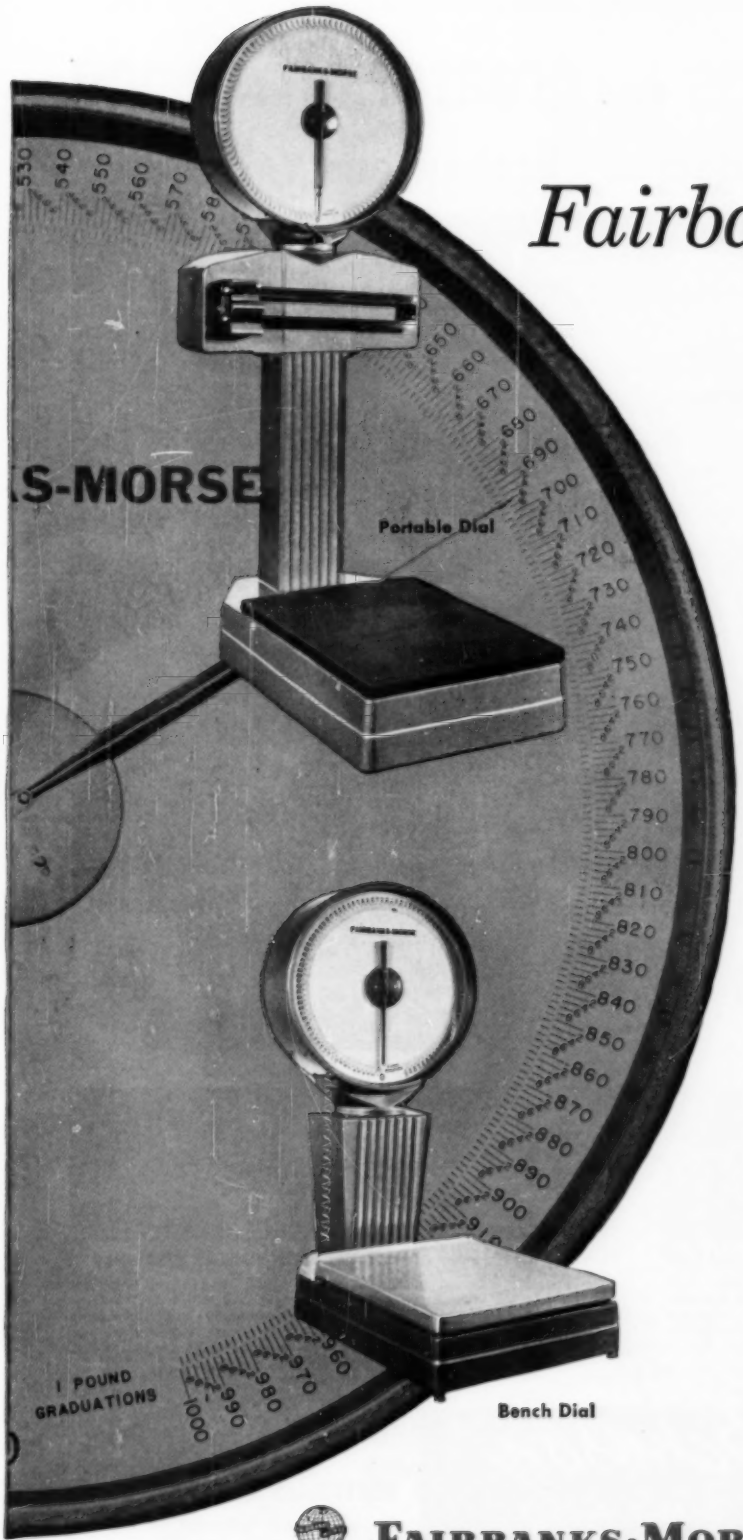

Fairbanks-Morse floaxial dial scales

EASY TO READ...

EASY TO USE...

LASTINGLY ACCURATE

Everything you've ever wanted in a dial scale, you'll find in the completely new . . . completely different Fairbanks-Morse line!

Fairbanks-Morse engineers designed the new line with your needs in mind . . . based on exhaustive field reports. They're streamlined . . . easy to read . . . easy to use . . . rugged to resist shock loads and rough handling . . . easy to service and maintain. And, above all, they have the new, patented *Floaxial* dial mechanism that assures enduring accuracy. There are no knife edges or pinpoint pivots to wear and affect long-life accurate weighing.

Dial chart and indicator are designed for easiest reading—ever! There's nothing to distract the eye . . . you get faster, easier weight indication . . . less chance for reading errors. Dial head swivels a full 360 degrees for easy reading at any angle!

For the complete, time-saving, cost-saving story on the new Fairbanks-Morse Dial line, see your Fairbanks-Morse Weighing Expert or write direct, on your letterhead, for new, colorful, descriptive bulletin on the type of Floaxial dial you want. Address Fairbanks, Morse & Co., Dpt. TW-1, 600 S. Michigan Ave., Chicago 5, Ill.

FAIRBANKS-MORSE

a name worth remembering when you want the best

SCALES • PUMPS • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • RAIL CARS • HOME WATER SERVICE EQUIPMENT • MOWERS • MAGNETOS

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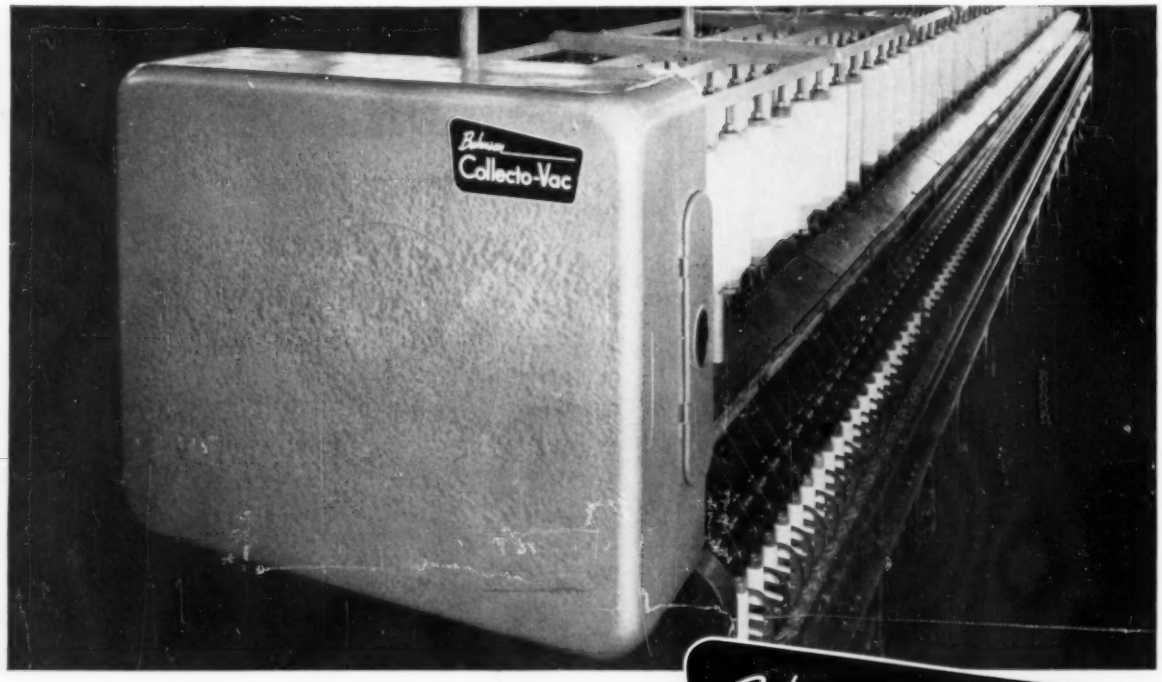
Bahnson's 40 years' air-handling engineering experience brings you

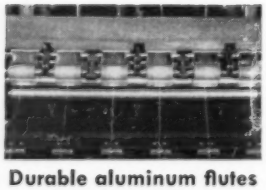
Important savings and greater efficiency

in automatic broken-end collection



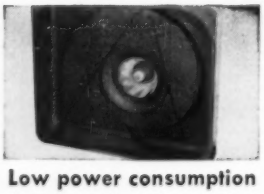
with the NEW

Bahnson Collecto-Vac



Durable aluminum flutes

Anodized aluminum flutes *eliminate flute warpage* and minimize static electricity build-up on the smooth collecting surfaces.

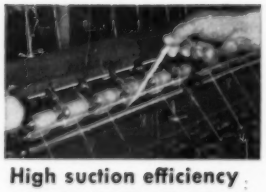


Low power consumption

Specially engineered main duct gives maximum pressure distribution throughout system utilizing a Bahnson designed fan for high air handling efficiency.

Functional double entry

Vacuum sealed doors on each end of collection box facilitate operation, save time and money.



High suction efficiency

Collection ducts and flute connecting tubes are completely air-tight due to specially compounded seals at tube joints. Efficient suction performs double duty, too, in lint and fly recovery.

91 OF THE TOP 100

Of the nation's 100 top textile manufacturing firms, 91 are users of Bahnson equipment!

Bahnson COMPANY
WINSTON-SALEM, N. C.

WRITE US TODAY
for additional information on the *new* Bahnson Collecto-Vac.

AIR CONDITIONING • CLEANING • VACUUM COLLECTION

For more information, write direct or use Reader-Service post card.

for winding synthetics...

SONOCO

3°30′

CONES

light WEIGHT

medium WEIGHT

heavy WEIGHT

Made to fit the yarn in three construction weights—light, medium, and heavy weight for constrictive yarns and extra large packages!

This cone was especially developed for winding rayon, nylon and other filament yarns for knitting or creeling. It is available plain or with the SONOCO Velvet or Unitex Surface. Three lengths—6″, 6¾″ and 7″. Available in some solid colors. Colored lacquer tips and printed bands can be specified. Can be notched, scored, perforated or treated. Consult your SONOCO sales-engineer or write us direct.

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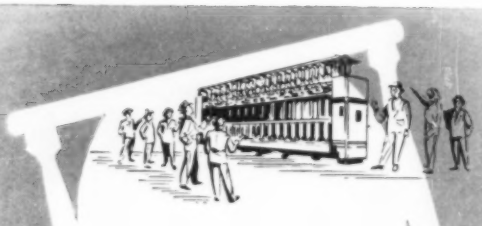
DEPENDABLE SOURCE OF SUPPLY



In 1952
SACO-LOWELL *Introduced*
the **GWALTNEY SPINNING FRAME** —
the only revolutionary spinning improvement in 100 years

NOW IN 1955

OVER 356,000 SPINDLES OF
SACO-LOWELL GWALTNEY SPINNING
ARE IN DAILY OPERATION —

A major step in the automation program of those mills

Gwaltney Spinning Frames have demonstrated beyond any doubt their ability to produce yarns that are stronger, far more even, and of higher grade than the same count yarn produced from the same stock with conventional spinning — and this improved quality has been produced at considerably lower operating costs and resultant higher profit.

The superiority of Gwaltney Spinning is achieved through a combination of many developments including

- Balloon controls
- Practically uniform tension at all stages of the doff, regardless of bobbin size and ring rail position

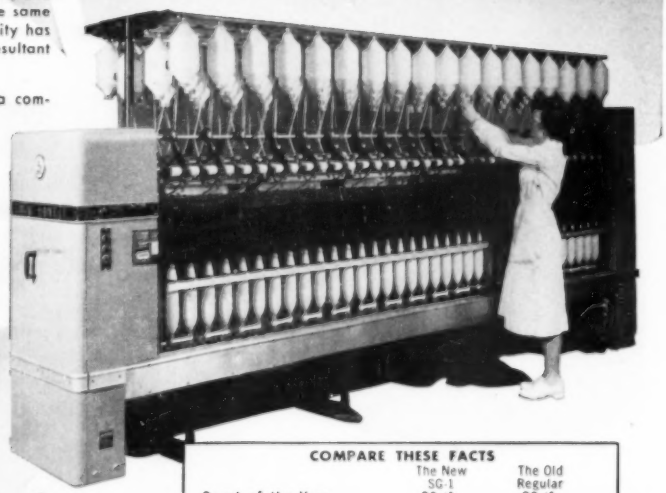
Plus, many other special features

Saco-Lowell Gwaltney Spinning Frames can be successfully used for processing all of the current commercially used fibres: cotton, wool, synthetics and blends.

They can be equipped with Shaw Drafting element, Duo Roth, Standard Gwaltney, SS-4G or Z-6.

The purchase of Gwaltney Spinning is an "investment in progress" that pays off in higher profits and top quality.

A Saco-Lowell engineer will be glad to give you full details, or, arrange a demonstration.



COMPARE THESE FACTS

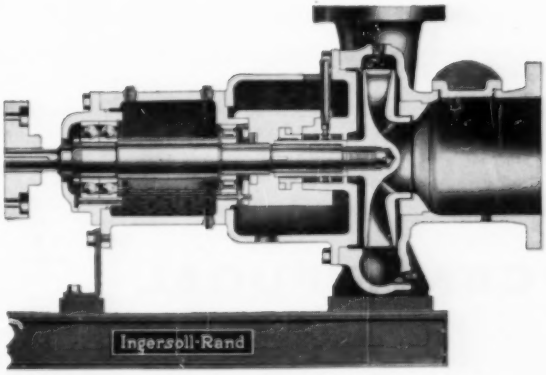
	The New SG-1	The Old Regular
Count of the Yarn	20/1	20/1
Length of Yarn Traverse	10.62"	5.88"
Ring Size	3.0"	2.0"
Weight of Yarn on Bobbin	12 oz.	3.2 oz.
Yards of Yarn on Bobbin	12,600	3,360
Unwinding Time at 500 yds./M	25.2 Min.	6.72 Min.
Bobbins creeled per Spindle per Hr. at Winder	2.39	8.93
Spindle Speed	7,920	7,920
Traveler Speed	6,220 Ft./M	4,146 Ft./M
Speed of 1" Front Roll	170 R.P.M.	170 R.P.M.
100% Production per Spindle per Hr.	.053 Lbs.	.053 Lbs.
Turns per Inch of Twist	14.9	14.9
Doffing Cycle	14.73 Hrs.	4.14 Hrs.
Estimated Efficiency	96.1	91.2
Net Production per Spindle Per Hr.	.0509 Lbs.	.0483 Lbs.
Increase for SG-1	5.4%	.....

SACO-LOWELL
60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

WANTED:

Your TOUGHEST Pumping Jobs!

Radically new type of centrifugal pump handles a variety of industrial liquids, even the most difficult, without clogging or air binding



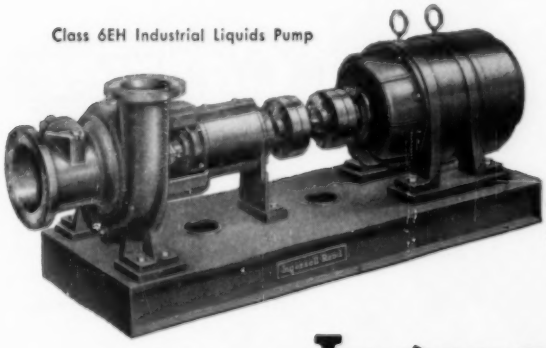
Section through Class 6EH pump, showing the patented construction

Not just a modified centrifugal pump, the new Ingersoll-Rand Class EL, EM and EH Pumps feature a *radically new* and patented construction which makes them non-clogging, non-vapor-binding, self-venting and self-priming.

Foamy solutions containing up to 50 percent entrained air or gases can be pumped continuously without danger of losing prime or vapor binding. And viscous liquids or mixtures with exceptionally high solids content can be handled with equal ease—with complete freedom from clogging.

Crystals or other solids in suspension can be pumped without injury. And with *any* type of liquid, the pump will maintain its prime even when the suction piping is uncovered or exposed to the air.

Class 6EH Industrial Liquids Pump



These heretofore unattainable performance characteristics result from the unique *diverging* impeller design in which the area at the exit is much greater than at the inlet. Hence the material pumped cannot enter in sufficient quantity to replace the ejected liquid and a vacuum space is created between the blades. Unlike the ordinary centrifugal pump, conversion from velocity to pressure is accomplished in the impeller as well as the casing and the relative velocities are considerably lower. This reduces impeller wear when handling liquids with high solids content.

Field experience with the new EL, EM and EH pumps has conclusively proved their ability to handle the *toughest* pumping jobs. In actual service, they are pumping solutions that no other centrifugal pump could handle without air binding or clogging.

If *you* have a liquid moving problem that's too tough for an ordinary pump, this new I-R Pump offers a practical, low-cost solution. Sizes available for capacities from 200 to 7000 gpm, heads to 225 ft. For complete details, send today for your copy of Bulletin 7325.

Ingersoll-Rand

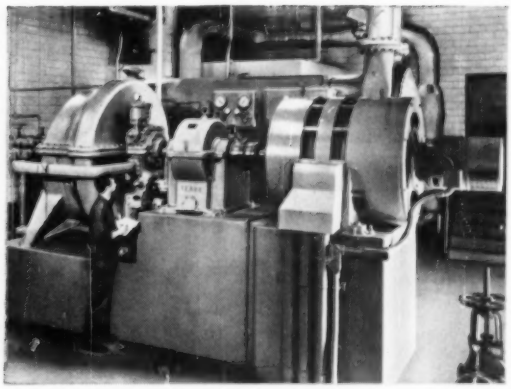
11 BROADWAY, NEW YORK 4, N. Y.

10-302

PUMPS • COMPRESSORS • CONDENSERS • VACUUM EQUIPMENT • GAS & DIESEL ENGINES • ROCK DRILLS • AIR & ELECTRIC TOOLS

For more information, write direct or use Reader-Service post card.

GERRISH MILLIKEN REFRIGERATES WITH A CARRIER CENTRIFUGAL



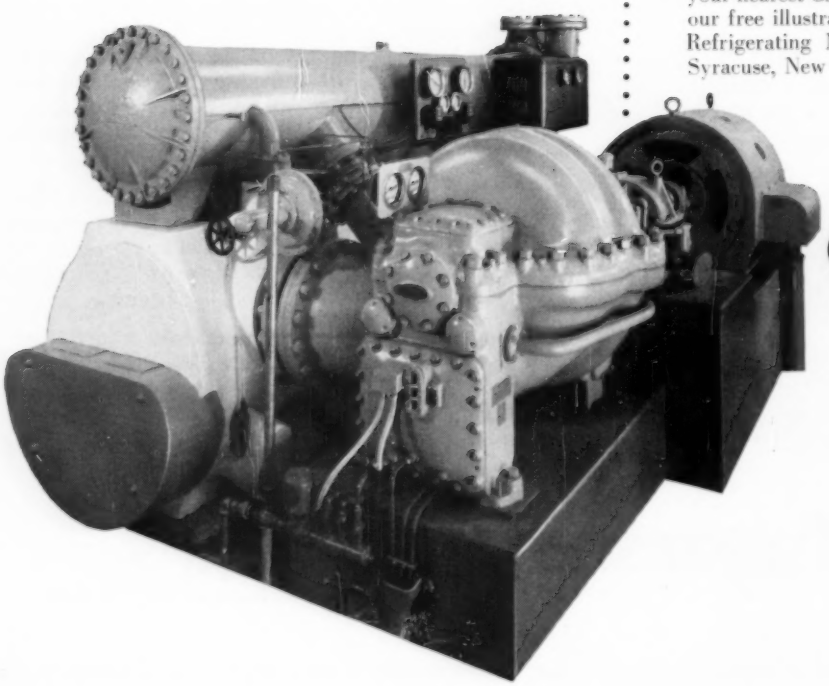
The Gerrish Milliken mill at Pendleton, S. C., uses this 900-ton-capacity Carrier Centrifugal Refrigerating Machine to chill spray water for several Carrier central station air conditioning systems. Throughout the mill, temperature and humidity are held at precise levels.

Carrier Centrifugals serve dependably – often around the clock – in many other mills, including Greenwood, Amertron, Spindale and Stonecutter.

Carrier developed the first centrifugal refrigerating machine in 1922. Carrier has built more of them – by far – than all other makers combined.

For unbeatable performance, why not insist on Carrier centrifugal refrigeration for *your* mill? It can serve dependably as the heart of *any* air conditioning system. Carrier Centrifugals are available in many sizes from 100 to 4000 tons cooling capacity.

Make use of our experience and assistance. Call your nearest Carrier office. Or write us direct for our free illustrated catalog—"Carrier Centrifugal Refrigerating Machines." Carrier Corporation, Syracuse, New York.



Carrier

air conditioning

refrigeration

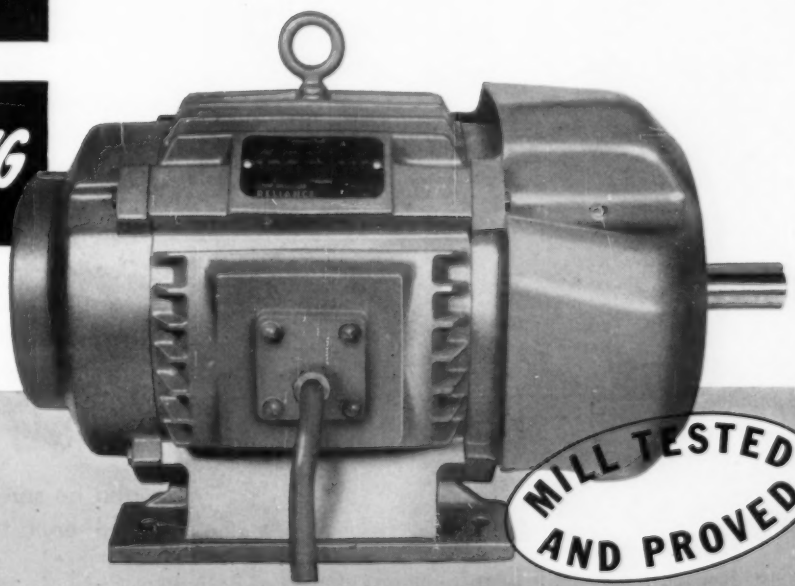
industrial heating

NO MORE MOTOR CLEANING

The *new* Reliance Lint-Proof Textile Motor is totally enclosed, positively eliminating lint-clogging. Lint-filled air cannot penetrate the sealed motor housing, and the high velocity cooling fan blasts lint off the outside of the motor.

It will pay you to try these new textile motors and see how they cut operating costs by eliminating motor cleaning.

Now available—1-20 hp. general purpose, air-cooled textile motor for application on spinning, roving, drawing, and twisting frames . . . and on cards, openers, pickers, and other textile machines. B-1508



IT'S LINT-PROOF

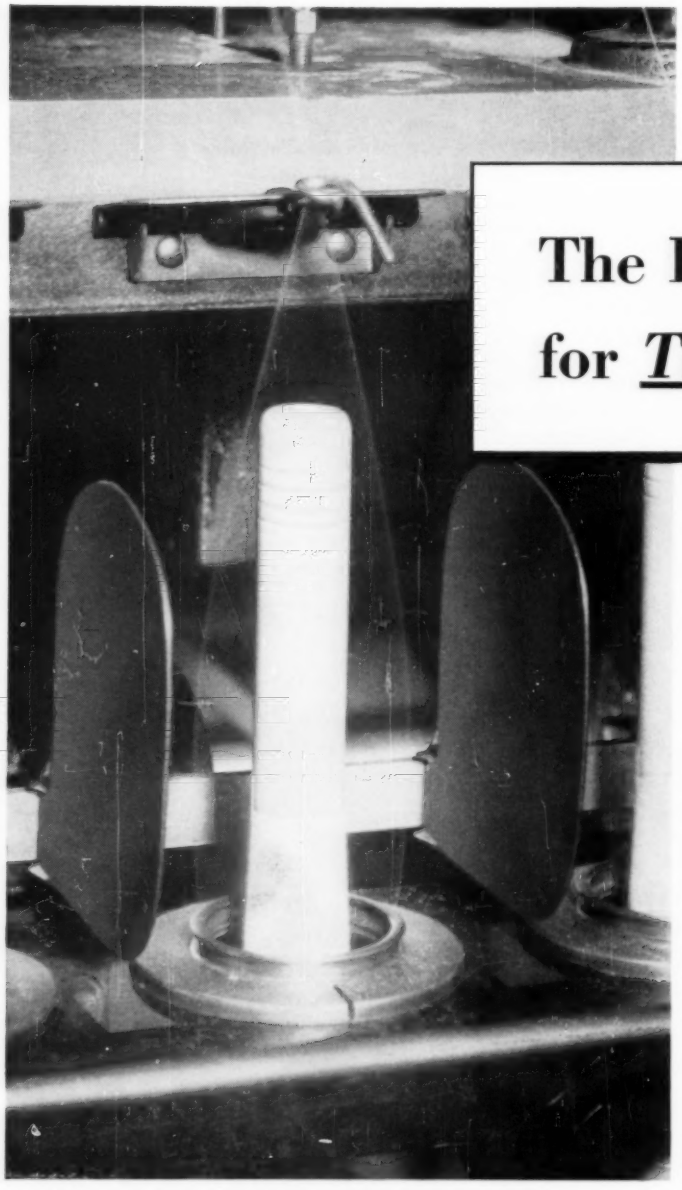
RELIANCE Totally-Protected MOTORS

RELIANCE ELECTRIC AND ENGINEERING CO.

Cleveland 10, Ohio • Offices in Principal Cities

Canadian Division: Welland, Ontario

For more information, write direct or use Reader-Service post card.



The Right Traveler for *That* Job!

Whenever, wherever you need Ring Travelers . . . and particularly for the fussy jobs . . . call National-Sterling. Our staff of experienced engineers is at your disposal always. A stock of over 18,000 different sizes, weights, and styles of Ring Travelers for twisting and spinning all natural, synthetic, and blended fibres is as near as your telephone. From our Pawtucket plant or newly enlarged Charlotte warehouse we can supply your needs promptly, or when necessary, design travelers for your special applications.

Rely on National-Sterling for your Ring Travelers and be sure of the best in quality and service!

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354 Pine Street, Pawtucket, R. I., Tel. PAwtucket 3-7720-1
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Sterling
RING TRAVELERS

F. L. CHASE, JR., *Pres. & Treas.* L. E. TAYLOR, *So. Mgr.*

FOR SPINNING AND TWISTING ALL NATURAL AND SYNTHETIC FIBRES

NATIONAL RING TRAVELER CO., PAWT. R.I., U.S.A.

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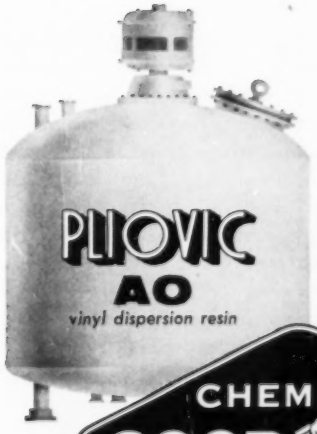
Photo courtesy Cotan Division, Interchemical Corporation, Newark, N. J.

Now – it's "Wall-Plastic"



The scene above illustrates a new, momentum-gathering field of application for vinyl resins–the fast-growing trend from wallpaper to "wall-plastic."

The material being shown is *Cohyde* – a plastic coated fabric which through its three-dimensional beauty and durability is outstanding as a wall covering. And it is made with a plastisol based on PLIOVIC AO – the Goodyear vinyl resin especially designed for use in dispersions.

PLIOVIC AO is used in this premium-quality covering because it can be processed at relatively low temperatures. This in turn, affords greater uniformity and better physical properties in the end product, by virtue of a shorter heat history.

What can PLIOVIC AO do for you in the manufacture of wall coverings or any of the many other coated fabric products? Why not find out by writing to: Goodyear, Chemical Division, Dept. M-9433, Akron 16, Ohio.

Cohyde–T. M. Interchemical Corporation, New York, N. Y.

CHEMICAL
GOODYEAR
DIVISION

Plastics
Department

Chemigum, Plioflex, Pliolite, Plio-Tuf, Pliovic–T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

CHEMIGUM • PLIOFLEX • PLIOLITE • PLIO-TUF • PLIOVIC • WING-CHEMICALS

High Polymer Resins, Rubbers, Latices and Related Chemicals for the Process Industries

Here it is!

THE NEW DIEHL "BA" POWER TRANSMITTER

For Draper Looms

Exclusive new design features mean... *consistent* quality production... *peak* operating efficiency... minimum maintenance, labor and costs!

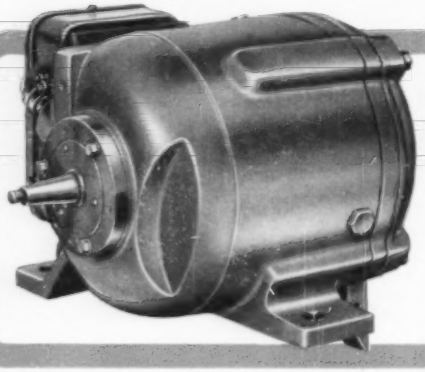


Fig. 1—STREAMLINED FRAME—Note new, smoother frame. Large roomy terminal box simplifies handling leads. Easier to clean—and keep clean.

Fig. 2—KINETIC BRAKING ACTION—Larger and more powerful brake with kinetic braking action for rapid, accurate stops. Particularly desirable for center fork detection looms—eliminating defects incident to late stops when weaving synthetic yarns.

The original and only loom power transmitter ... with new and important improvements! Embodies all the advantages of its famous predecessor plus many outstanding design and construction features never before incorporated in a loom drive!

Over 40,000 Diehl Power Transmitters have been in continuous operation on DRAPER LOOMS — *most of them more than six years!* Their basic design has been time-tested in the toughest proving ground of all—*actual mill use.*

The new Diehl model "BA" Power Transmitter is even *more* compact, *more* streamlined, *more* efficient and *more* easily installed and serviced than its famous predecessor.

It's an inverted-type high inertia motor combined with a fast, positive clutch-brake mechanism. But in addition, the *new* "BA" has exclusive new design features—like the remarkable clutch-actuating bearing mounting... the kinetic braking action ... the improved unitized clutch-brake assembly. These important advancements mean increased production ... improved cloth quality ... lowered operating costs ... fewer shut-downs.

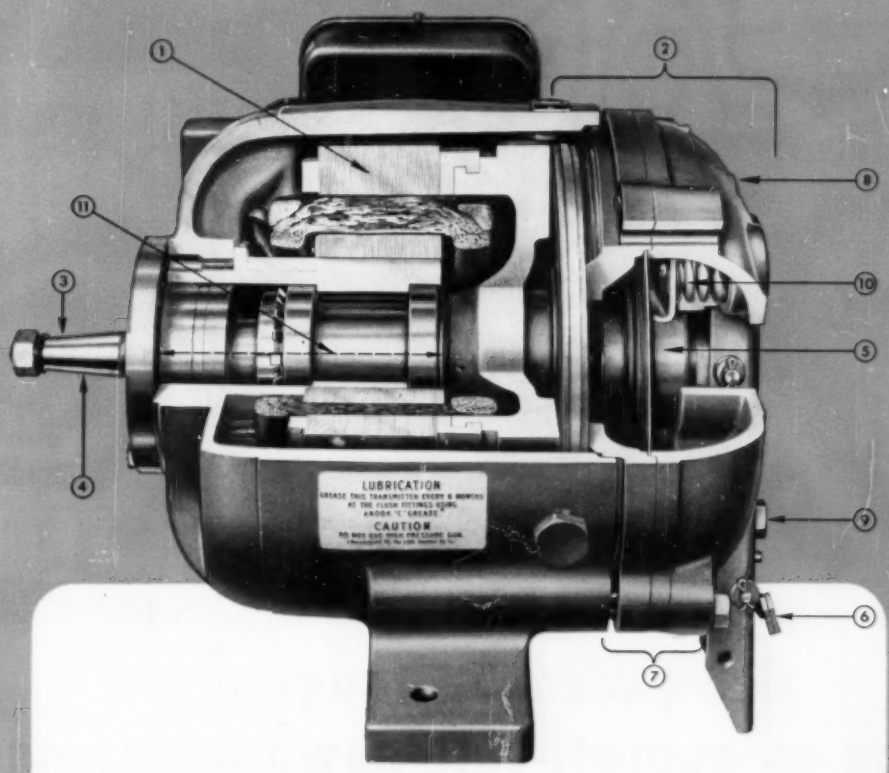
We'd welcome the opportunity to study your application requirements, and show you how the new Diehl "BA" Power Transmitter can effect savings in your mill. Write, wire or phone today for complete information.

DIEHL MANUFACTURING COMPANY

Electrical Division of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, NEW JERSEY

ATLANTA • BALTIMORE • CHARLOTTE • CHICAGO • CINCINNATI • DETROIT • MILWAUKEE • NEEDHAM, MASS. NEW YORK • PHILADELPHIA • PITTSBURGH



DESIGN FEATURES

1. High inertia inverted motor provides "stored energy" for smooth, fast starts and positive picking (maximum inertia with minimum size) . . . prevents regeneration.

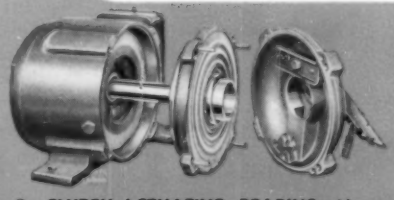
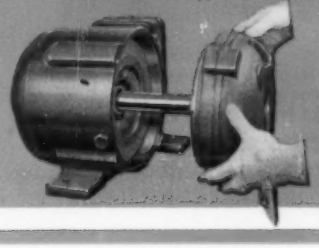


Fig. 3—CLUTCH-ACTUATING BEARING—New diaphragm mounting for frictionless clutch action, positive radial rigidity of bearing . . . eliminates fretting corrosion . . . means full self-alignment of bearing for maximum life.

Fig. 4—UNITIZED CLUTCH-BRAKE ASSEMBLY—Improved and simplified for positive action and ease of adjustment. Automatic clutch compensation eliminates most periodic adjustments for wear. Removes readily as unit for maintenance, without disconnecting motor from loom frame.



plus these outstanding New Features

2. **CLUTCH-BRAKE ASSEMBLY**—Improved, simplified. Readily removable as a unit. (See Fig. 4)
3. **PINION**—Free accessibility for installation and maintenance.
4. **SHAFT**—Large diameter, alloy steel, heat treated—assures long life, eliminates need for outboard bearing.
5. **CLUTCH-ACTUATING BEARING**—A strikingly new and improved method of mounting. (See Fig. 3)
6. **KINETIC BRAKING ACTION**—for rapid, accurate stops. (See Fig. 2)
7. **CLUTCH AND BRAKE ADJUSTMENT**—Simple and convenient. Provides visible check on brake alignment.
8. **CLUTCH-SETTING INDICATOR**—Built integral with unit for instantaneous external checking of clutch setting.
9. **SAFETY LATCH**—Built integral with unit. Prevents accidental engagement of clutch.
10. **CLUTCH-LOADING ASSEMBLY**—Internally located, hence tamper-proof.
11. **SHAFT-END BEARINGS**—Arrangement simplified and improved. Two ball bearings and an extra large roller bearing assure maximum life.

HIGH-FINISHING OUTPUT of dyeing range is speeded by G-E direct-current motors. In this installation, packaged Speed Variator power unit was located out of range area to save floor space.

G-E packaged range drive steps up output, cuts down maintenance

INCREASED PRODUCTION—G-E packaged Speed Variator range drive supplies the flexibility and close-speed control you require for continuous operation of textile-finishing equipment. Providing easily controlled speeds that are smoothly adjustable over a wide range, this packaged system keeps motors exactly co-ordinated, maintains constant cloth tension and helps improve quality of goods.

EASY INSTALLATION—Compact Speed Variator power unit is delivered to you completely wired, assembled and tested. No special foundation is required, and unit may be placed in any convenient location.

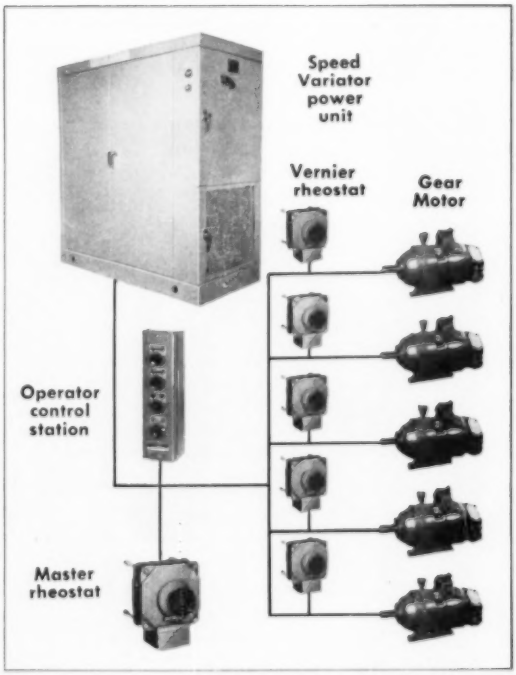
SIMPLE OPERATION—Speed of the entire range is controlled with a simple rheostat dial or by remotely mounted push buttons. After initial adjustment, co-ordination of the driven range is completely automatic.

LESS MAINTENANCE—Smooth operation and sturdy construction of General Electric's packaged range drive reduces maintenance time and expense. All components of Speed Variator unit are protected within positive-pressurized cabinet and are easily reached through hinged doors. Inexpensive, replaceable glass-fiber filters help keep lint and dirt from packaged power system. The G-E three-piece gear-motors require no special mounting and may be removed for servicing without disconnecting gears.

ENGINEERING HELP—To learn more about range drives and the advantages that adjustable speed can bring to your operation, contact the textile expert at your nearest G-E Apparatus Sales Office. Direct Current Motor and Generator Department, General Electric Company, Erie, Pennsylvania.

815-6

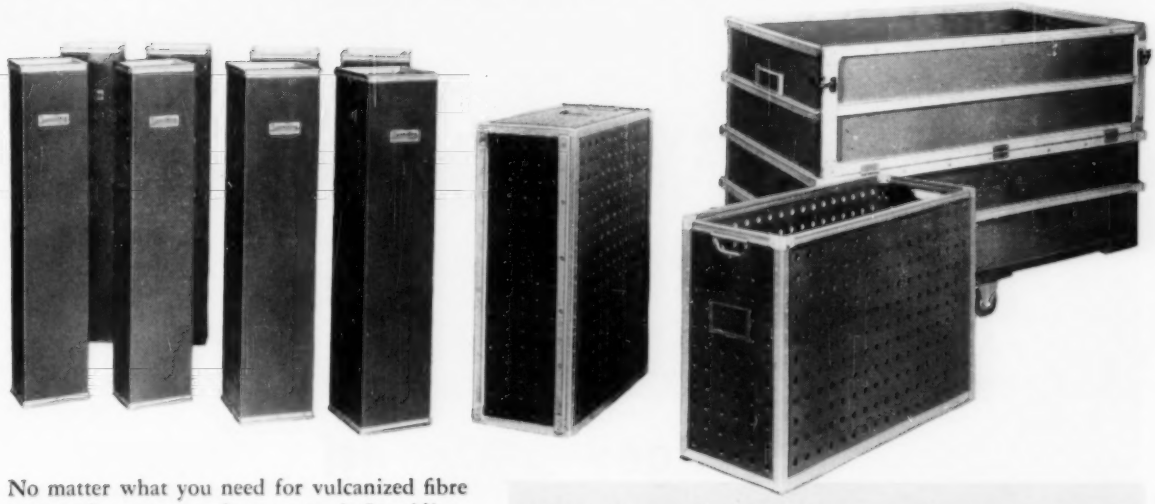
GENERAL ELECTRIC



QUICK, FINGER-TIP CONTROL of entire range is provided by push-button control system and master rheostat. For easy, low-cost installation, controls and Speed Variator power unit can be installed in any convenient location.

Spaulding One Source

FOR ALL YOUR VULCANIZED FIBRE BOXES, BARRELS, BASKETS, CANS AND TRUCKS



No matter what you need for vulcanized fibre receptacles, your one best source is Spaulding. Tough, lightweight Spaulding receptacles come in a wide range of standard sizes. Their smooth surface won't splinter or snag. Is fully resistant to oils, greases and moisture. No rust or corrosion. For special needs, Spaulding will fabricate receptacles exactly to your specifications.

Write or call your nearest Spaulding Branch Office for information on Spaulding products for the textile industry.

SPAULDING BRANCH OFFICES

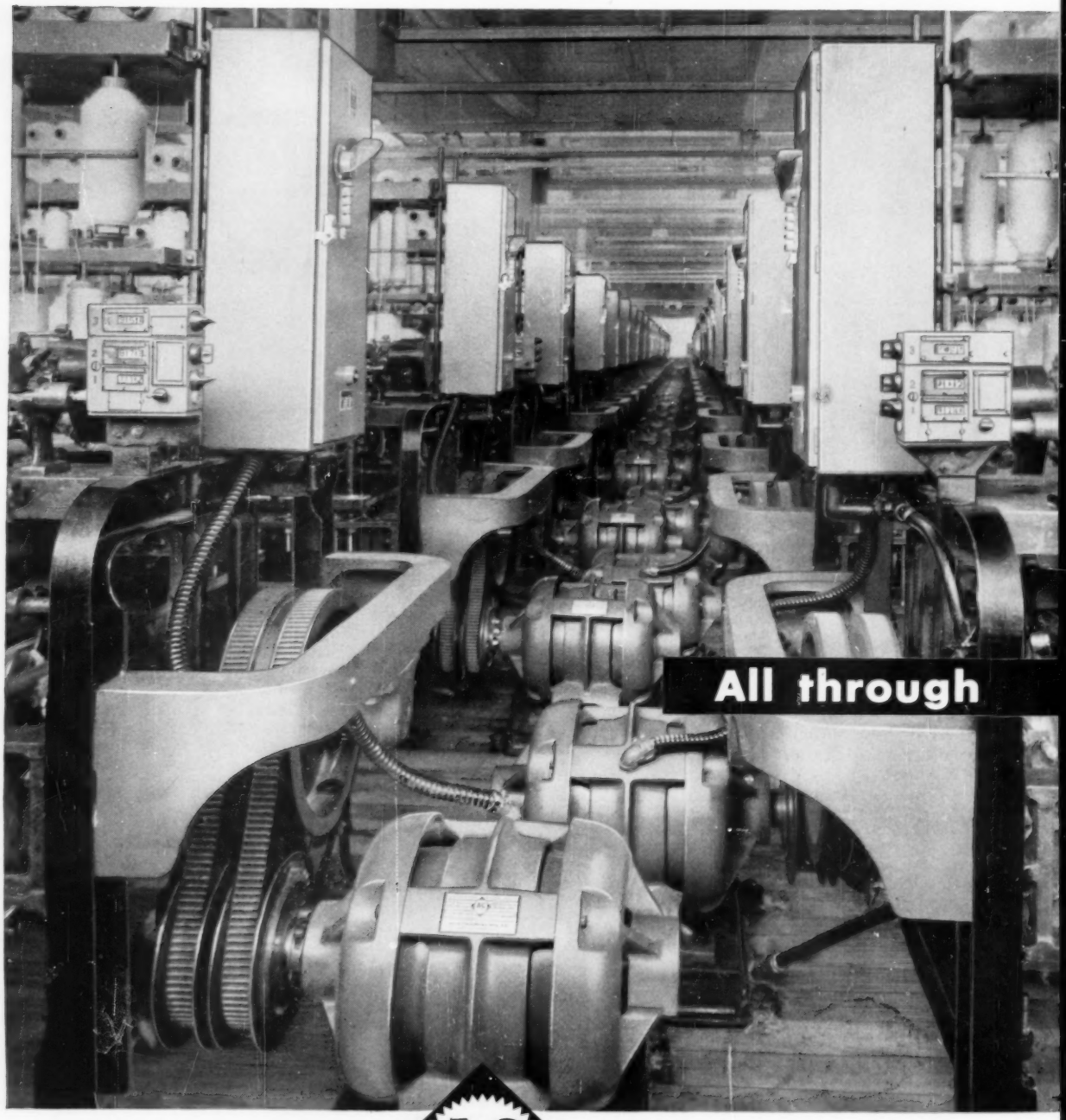
BALTIMORE 18, MD.
BOSTON 16, MASS.
BRIDGEPORT 5, CONN.
CHICAGO 25, ILL.
CHICAGO 38, ILL.
CLEVELAND 14, OHIO
CLEVELAND 16, OHIO
(Rocky River)
DAYTON 2, OHIO
DETROIT 1, MICH.
FORT WAYNE 6, IND.
LANSING 10, MICH.
LONG ISLAND, N. Y.
(Woodhaven 21)
MILWAUKEE 8, WIS.
NEW YORK 55, N. Y.
NEWARK, N. J.
(Westfield, N. J.)
PHILADELPHIA, PA.
(Camden 1, N. J.)
ST. LOUIS 5, MO.
TONAWANDA, N. Y.
LOS ANGELES 15, CALIF.
C. D. LaMoree
BERKELEY 10, CALIF.
C. D. LaMoree
TORONTO 18, ONT.
A. A. Andersen & Co.

SPAULDING FIBRE COMPANY, INC., TONAWANDA, NEW YORK

In addition to receptacles, Spaulding makes many other products for the Textile Industry, including **BOBBINS, HEADLESS PACKAGE TUBES, TAKE-UP TUBES, SIZING TUBES, KELLY ROLLS, LAP ROLLS** and **PIRN CAPS** and **REDRAW CAPS** for headless package tubes, sizing tubes, take-up bobbins and pirn tubes.

 For more information, write direct or use Reader-Service post card.

There's MORE — PRODUCTION in your mill with— ALLIS-



A-C ALLIS-CHALMERS

ALLIS-

CHALMERS Textile Drives

Quick-Clean Motors and *Texrope* Drive equipment are designed to work as a cost-cutting team

• From power line to driven shaft, Allis-Chalmers textile drive equipment is designed to increase your quality and production . . . cut your maintenance costs.

Quick-Clean motors and *Texrope* drive equipment are all specially tailored to give maximum efficiency in a specific part of the mill. In the card room, on the spinning frame, for the loom drive, in roving and weaving, these Allis-Chalmers products have proven their ability.

Less Motor Stoppage

Quick-Clean motors are engineered for trouble-free service in humid, lint-laden atmospheres. Combination of wide-open design, streamlined interior surfaces, and smooth powerful fans eliminates lint accumulation. The result — Allis-Chalmers motors run cool.

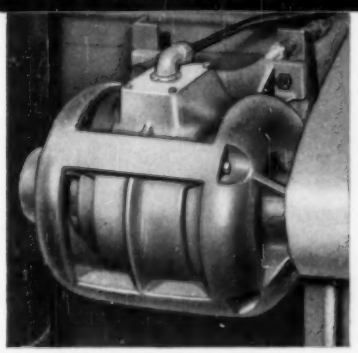
Fast Speed Adjustment

Vari-Pitch sheaves, member of the famous *Texrope* drive family, provide in seconds the exact speed needed for any yarn number.

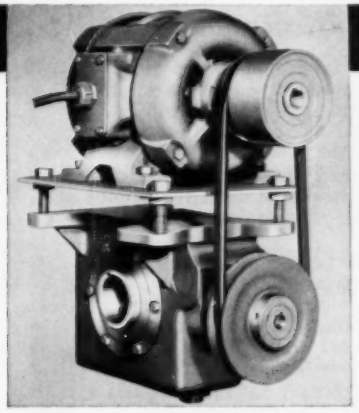
Whether you're ordering motors and *Texrope* drives separately or as components of new machinery, A-C engineers are ready to help with your requirements. Contact your nearby Allis-Chalmers sales office or distributor, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin. A-4923

Quick-Clean, Texrope and Vari-Pitch are Allis-Chalmers trademarks.

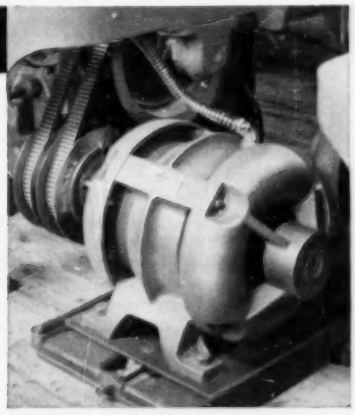
the mill . . .



Roving —Special, slow, smooth acceleration characteristics are built into this *Quick-Clean* motor to provide slow starts, fine jogging — produce uniform roving.



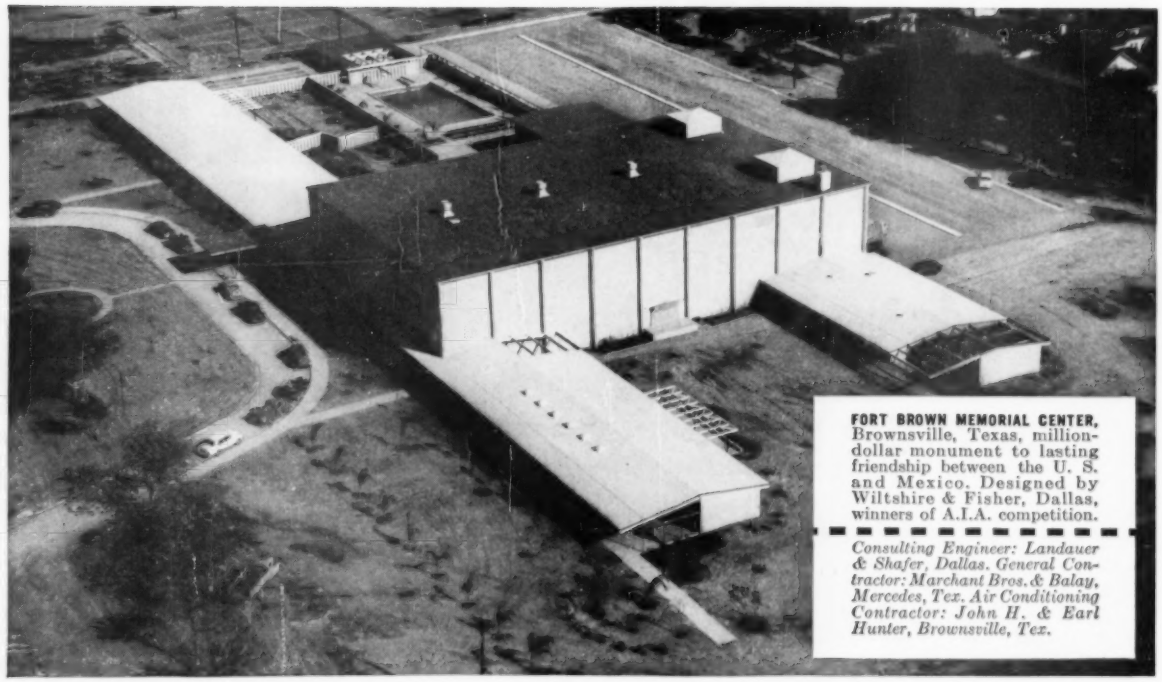
Carding — Compact card drive package with *Quick-Clean* motor and *Texrope* drive eliminates overhead shafts and belts—solving problems of lighting and cleanliness.



Spinning—*Texrope* drives link this *Quick-Clean* motor to the frame. Open air passages and powerful fans sweep dirt and lint through and out of the motor.

CHALMERS

For more information, write direct or use Reader-Service post card.



FORT BROWN MEMORIAL CENTER, Brownsville, Texas, million-dollar monument to lasting friendship between the U. S. and Mexico. Designed by Wiltshire & Fisher, Dallas, winners of A.I.A. competition.

Consulting Engineer: Landauer & Shafer, Dallas. General Contractor: Marchant Bros. & Balay, Mercedes, Tex. Air Conditioning Contractor: John H. & Earl Hunter, Brownsville, Tex.

IT'S AIRTEMP *AIR CONDITIONING IN PRIZE-WINNING FORT BROWN* memorial center

HERE'S MORE EVIDENCE OF TREND TO AIRTEMP AMONG LEADING U. S. ARCHITECTS!

Airtemp air conditioning is *famous* for trouble-free performance—just the smooth-running result you'd expect from 21 years of advanced engineering by Chrysler. And when you install Airtemp, you're giving your clients the best assurance of low operating costs—year after year.

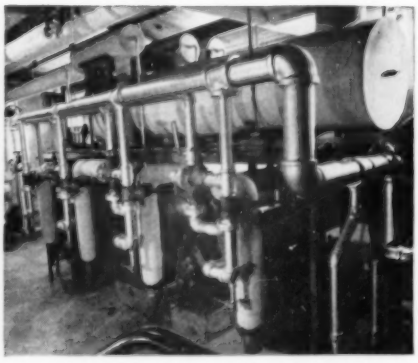
Whether your job is large or small, in the complete Airtemp line of equipment for all systems of modern air conditioning, you will find the *exactly right* equipment for every requirement.

When you air condition with Airtemp you can make *doubly* sure that your installations are right in every detail by utilizing the advisory services of *top engineers* of Airtemp Construction Corporation. And to safeguard your installations through the years ahead, there are Airtemp-trained *personnel* and service *facilities* right on the spot in every major community.

So remember, next time you're planning commerical or industrial air conditioning . . . specify AIRTEMP. Get the best equipment for the job *plus* the complete air conditioning service that will relieve you of many problems.

AIRTEMP BUILDS AIR CONDITIONING TO FIT ANY REQUIREMENT!

For full information on what Airtemp offers you, write to: Airtemp Construction Corporation, Dayton 1, Ohio



250 TONS OF COOLING! Two Airtemp Liquid Chilling systems provide water for cooling cycle in air conditioning of Fort Brown Memorial Center. Heart of each unit is the Airtemp Variable-Capacity Radial Compressor with exclusive design which saves space, reduces compressor weight. Quiet operation is due to perfect balance and reduced vibration.

Airtemp
CONSTRUCTION CORPORATION
SUBSIDIARY OF CHRYSLER CORP.

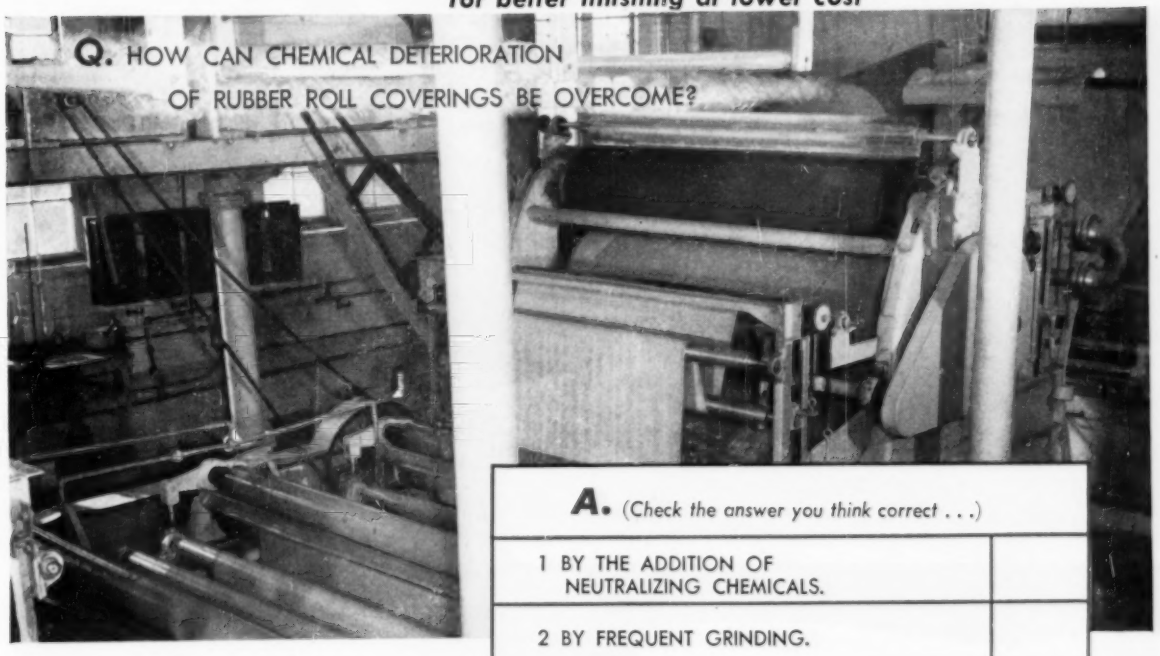
AIR CONDITIONING • HEATING FOR HOMES, BUSINESS, INDUSTRY

For more information, write direct or use Reader-Service post card.

STOWE-WOODWARD Maintenance Tips

for better finishing at lower cost

Q. HOW CAN CHEMICAL DETERIORATION OF RUBBER ROLL COVERINGS BE OVERCOME?



A. *(Check the answer you think correct . . .)*	
1 BY THE ADDITION OF NEUTRALIZING CHEMICALS.	
2 BY FREQUENT GRINDING.	
3 BY USE OF COVERINGS RESISTANT TO CHEMICALS INVOLVED.	

You'll find the correct answer in these Maintenance Tips

Answer number 3 attacks the problem at its source. Obviously, if the rubber roll covering used is subject to attack by chemicals inherent to or used in the process, anything less than change of roll formula is at best a compromise or a temporary solution.

Where neutralizing agents can be added to the process without sacrificing quality or production, it may be advisable to do so in order to use existing rolls. However, when rolls are recovered, compounds should be selected which are resistant to the attacking chemicals.

Where deterioration is slow, frequent grinding will to certain extent help to prolong the life of the roll by presenting a fresh unattacked surface.

Your Stowe-Woodward Sales Engineer will be glad to advise you on any problem regarding the care, selection or use of rubber covered rolls. Put his experience to work in your plant.

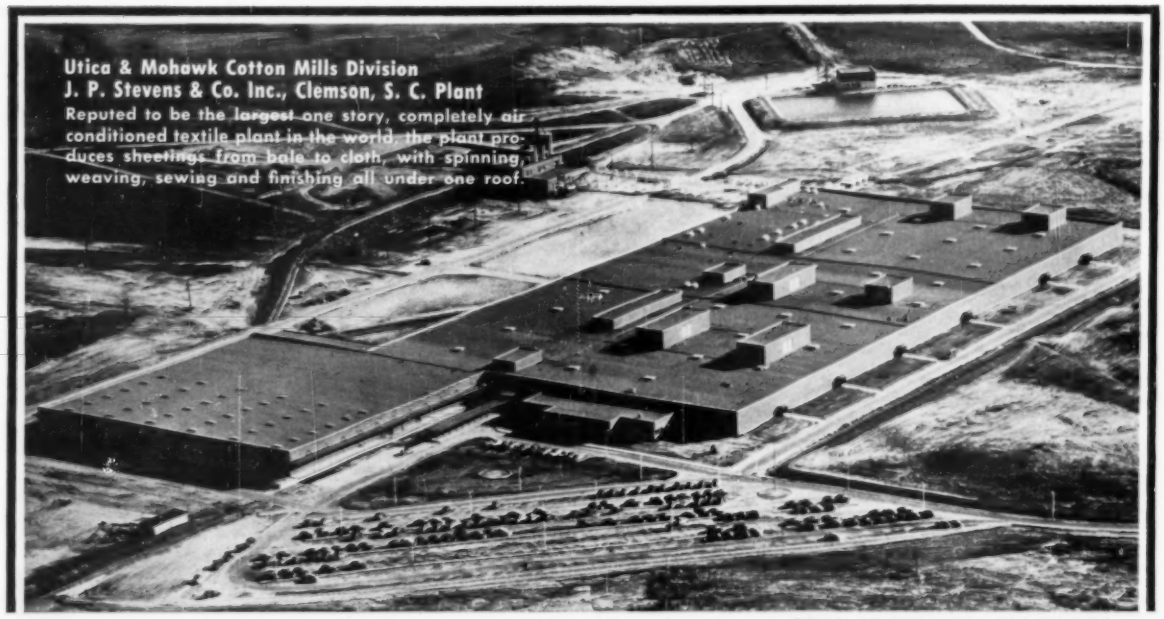
"RUBBER ROLLS with a REPUTATION"

S-W INC.

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA



Utica & Mohawk Cotton Mills Division
J. P. Stevens & Co. Inc., Clemson, S. C. Plant
Reputed to be the largest one story, completely air-conditioned textile plant in the world, the plant produces sheetings from bale to cloth, with spinning, weaving, sewing and finishing all under one roof.

DANIEL CONSTRUCTION CO., BUILDERS

LOCKWOOD GREENE PROJECTS IN . . . . .

COTTON

Lockwood Greene's work, originating in 1832, was the design of cotton mills. In the field of cotton textiles, Lockwood Greene has had over 2,400 engagements, and has designed projects totaling almost a half billion dollars in value.

Continuous management services from site selection to plant completion.

LOCKWOOD GREENE
ARCHITECTS — ENGINEERS

BOSTON 16, MASS. 316 Stuart Street
NEW YORK 17, N. Y. 41 East 42nd Street
SPARTANBURG, S. C. Montgomery Building

OVER A CENTURY OF INDUSTRIAL PLANT EXPERIENCE

BROCHURE AVAILABLE UPON REQUEST

Cotton Spinning and Weaving Plant
For the Government of Burma at Rangoon
This is the first cotton mill in Burma. Initial facilities include 20,000 spindles and 200 looms. Provision is made for a future bleaching and finishing plant.

Sharp for dull shades . . .

NATIONAL CARBANTHRENE® BLACK BROWN VA PASTE

Here's a versatile National anthraquinone vat that is particularly useful for shading subdued deep tones and as a shading color or major component in deep browns.

In heavy shades on cotton or viscose, National Carbanthrene Black Brown VA Paste has maximum (8) light fastness (In medium shades, it rates excellent; in light shades, very good!). In addition to excellent wash fastness this National Dye rates well up the scale in a long list of tests as shown in our Bulletin #429. Recommended also for materials that are to be resin finished for crease resistance.

Get in touch with our nearest office for shade card, working sample, price and delivery on this [illegible]al dye.

NATIONAL®

vat dyes

LIGHT FAST... WASH FAST... FOR THE-LIFE-OF-THE-FABRIC

Allied Chemical

NATIONAL ANILINE DIVISION ALLIED CHEMICAL & DYE CORPORATION

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Inquiries as to our services solicited

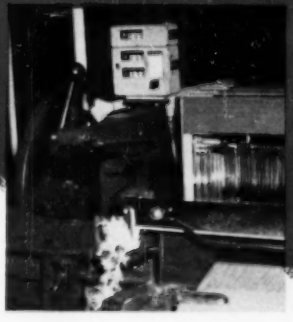
●

BUSINESS ESTABLISHED 1840

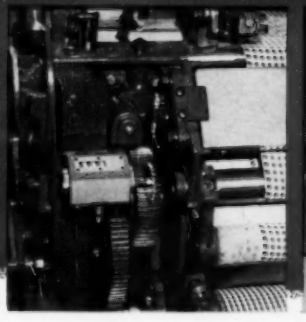
THIS COMPLETE VEEDER-ROOT "Countrol Package"

gives you AUTOMATIC UNIFORMITY all through your Mill . . . with New VEEDER-ROOT COUNTERS

. . . on Looms | **. . . on Frames**

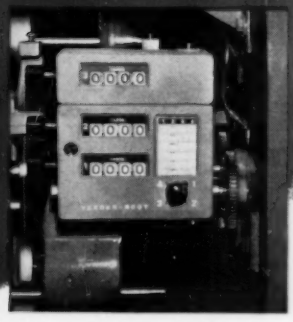


2-3-4 Pick Counter on Loom



Cut Meter on Loom

2-3-4 Hank Counter and Predetermining Counter on Drawing Frame



2-3-4 Yardage Counter and Predetermining Counter on Spinning Frame

On looms, 2-3-4 Pick Counters keep accurate production records and provide a basis for wage payment . . . while Cut Meters help maintain uniformity of cut-lengths of cloth, which is insisted upon today by the cutting-up trades.

On frames and other preparatory equipment, Hank, Yardage and Predetermining Counters hold can-variation to the minimum . . . and make it possible to run the largest economical packages.

This complete Veeder-Root "*Count*rol Package" adds up to better, automatic uniformity all through the mill. And that's why it pays *any* mill to get this Package of new and modern Veeder-Root Counters, when modernizing present machinery or buying new. Get in touch with the nearest Veeder-Root office *today*.

VEEDER-ROOT
INCORPORATED
"The Name that Counts"

HARTFORD 2, CONN. • GREENVILLE, S. C.

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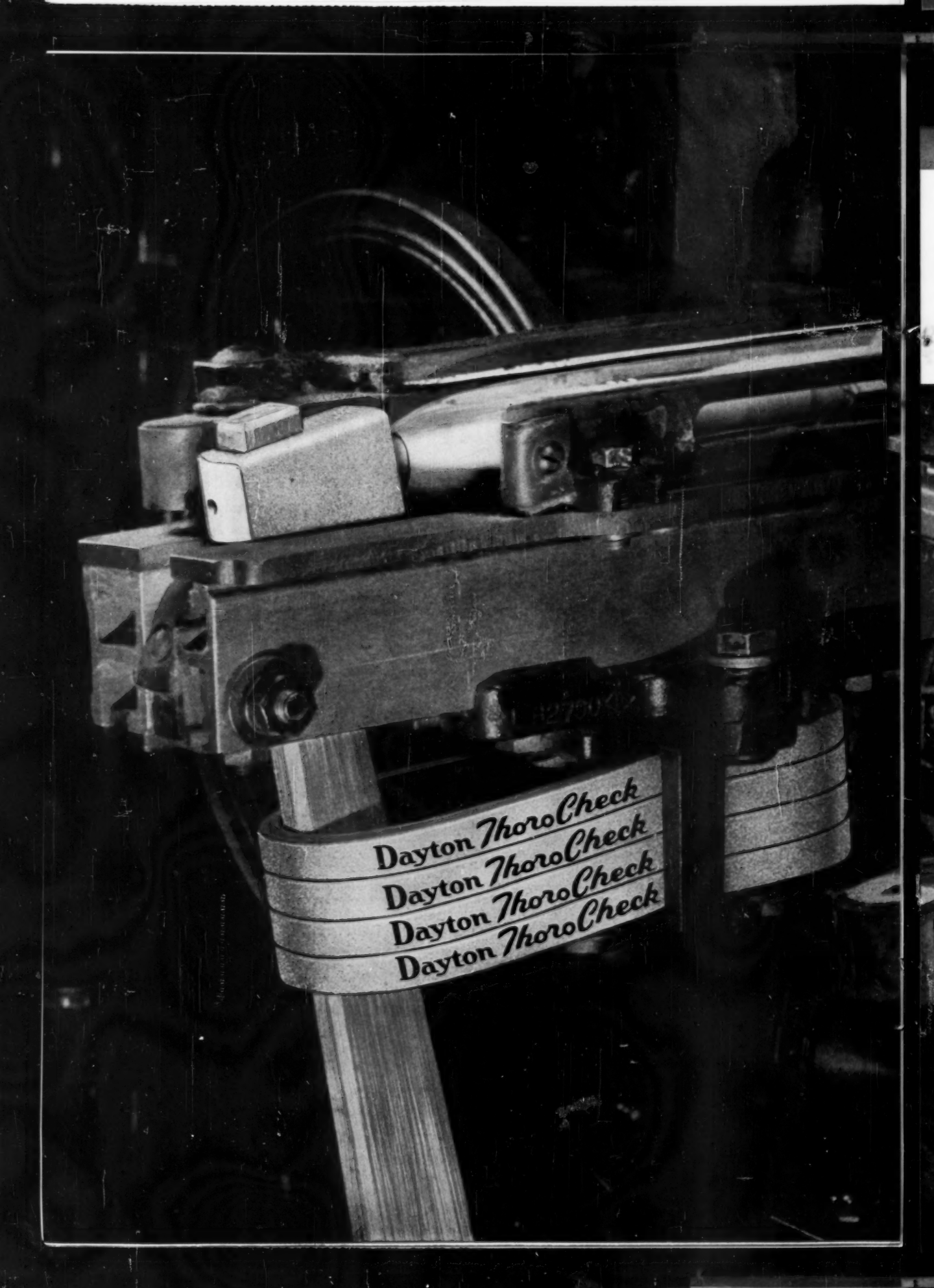
Montreal 2, Canada
Offices and Agents in Principal Cities


Dayton ThoroCheck
Dayton ThoroCheck
Dayton ThoroCheck
Dayton ThoroCheck

Improve your Picker Control and save 25 to 50 percent

In Picker and Check Strap Costs!

One mill saved 50% on picker replacement by installing Dayton Thorobred Loop Pickers. It's easy to see why, too. Daytons, molded in one piece, won't break when driven onto the stick.

Dayton Loop Pickers cushion millions of shuttle contacts without strain. And contact is perfect every time because of the slightly tilted, flared-bottom picker stick hole that insures easy, accurate seating and exact fit. Smooth sides and round corners practically eliminate jerked in fillings, save time and money – increase production.

Other mills report 25 to 50% savings in check strap costs with Dayton ThoroCheck Endless Check Straps.

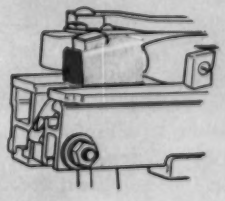
Typical proof: One mill ran Daytons on X-2 looms 24 hours a day, 5 days a week. After 2400 hours, no wear was apparent, no adjustment needed. Other check straps lasted half as long.

Revolutionary in design and construction, Dayton ThoroCheck straps eliminate drag over stick, give safe, graduated braking in both directions. Temperature or humidity never affect them, so you're assured fast, Monday starts.

Try Dayton Thorobred Loop Pickers and Dayton ThoroCheck Endless Check Straps on your looms for perfect control, sizeable savings. Your Dayton Representative will arrange a test or write *Dayton Rubber Co., Textile Div., 401 S. Carolina National Bank Bldg., Greenville, S. C.*

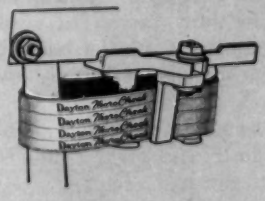
© D.R. 1956

Dayton Thorobred Loop Picker



New Design! Narrow back eliminates wear on lay end strap.

Dayton ThoroCheck Check Straps



Extra economy! Can be replaced singly or in sets.

Dayton Rubber 51 YEARS OF PROGRESS

Dayco and Dayton Thorobred Textile Products for better Spinning and Weaving.

AAF Hits the Target for ®ARROW

Air washers behind this bank of Auto-AIRMAT filters require practically no maintenance. These filters, serving the assembly room, represent one of five systems at Cluett, Peabody's Atlanta plant.
Air conditioning system engineered and installed by CARRIER CORPORATION, Atlanta.

Auto-AIRMAT Installations Eliminate Lint Problems at Cluett, Peabody Plant!

LINT, the textile industry's big problem, is no problem at all in the world's largest plant devoted exclusively to the manufacture of shirts. Cluett, Peabody & Co., Inc., makers of the famous Arrow shirts, protect air washers on five systems (totalling 216,000 cfm) with AAF Auto-AIRMAT filters serving the cutting, assembly and laundry rooms.

The Auto-AIRMAT is the *only* filter specifically designed to remove lint fibres from the air and clean itself automatically. The Airmat media, installed in roll form at top of unit, becomes a moving filter curtain that is re-rolled at bottom with its lint load. Clean media is automatically introduced in sufficient quantity to maintain resistance at proper level—and the lint is wrapped up in the roll for easy disposal.

If you have a lint problem, investigate the *lint filter*—AAF's Auto-AIRMAT. For complete product information, call your local American Air Filter representative, or write us direct for a copy of Bulletin 234.

Herman Nelson Unit Blowers

Herman Nelson Propeller Fans

BETTER AIR IS OUR BUSINESS

Illinois Steam Heating Specialties

AAF Filters and Precipitators

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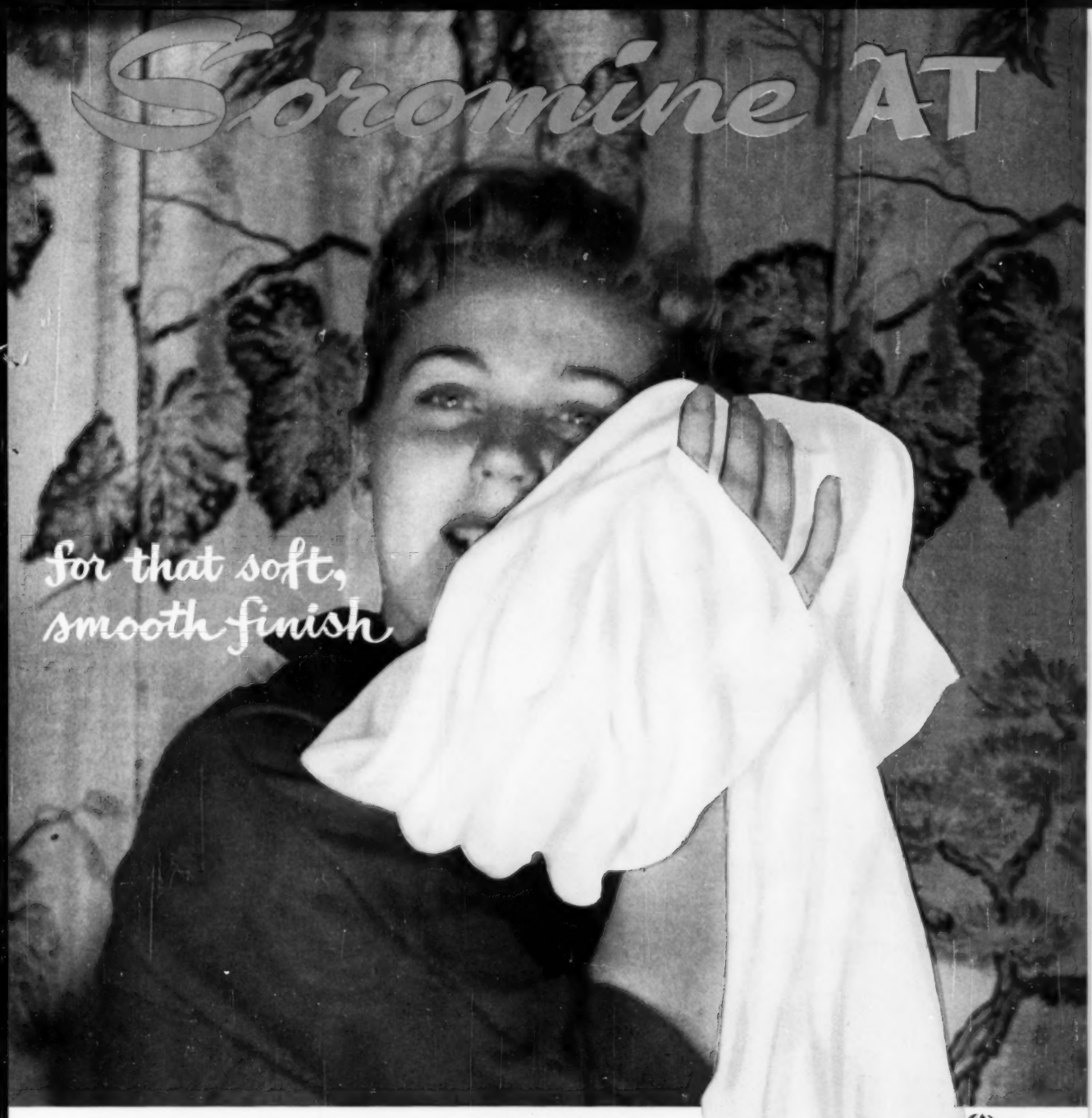
American Air Filter of Canada, Ltd., Montreal, P. Q.

For more information, write direct or use Reader-Service post card.

Soromine AT



for that soft, smooth finish

This new white amphoteric softener is ideal for treating dyed, printed or white bleached textiles . . . whether manufactured from animal, cellulosic or synthetic fibers. Besides imparting a full, smooth hand with good body, it reduces static electricity and gives excellent lubricity to yarns.

Being an ampholyte, SOROMINE®AT can function either as a cationic softener in acid liquors, or as a non-ionic and/or anionic softener in neutral and alkaline liquors. Application on yarns and piece goods is simple, since its exhaust can be controlled by pH adjustment.

It can be applied on quetch or pad, in pressure machines, jigs or overhead reel machines. It is compatible with the usual finishing ingredients — such as urea formaldehyde and melamine resins, starches, sulfonated oils, dextrin, etc. Other advantages of SOROMINE AT are its resistance to yellowing and discoloration, and lack of effect on light fastness of dyed fibers.

Our application engineers will be glad to help you incorporate SOROMINE AT softening into your finishing process. Write today for booklet with complete information.

From Research to Reality

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A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION

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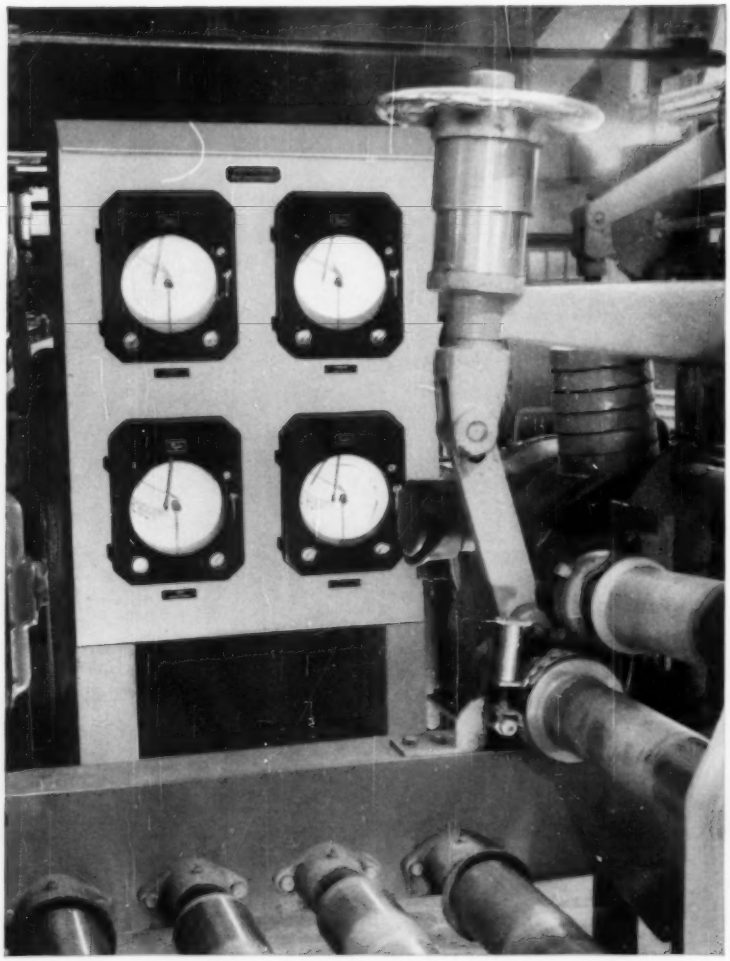
TAYLOR CONTROLS INSURE BETTER MERCERIZING AT DAN RIVER MILLS

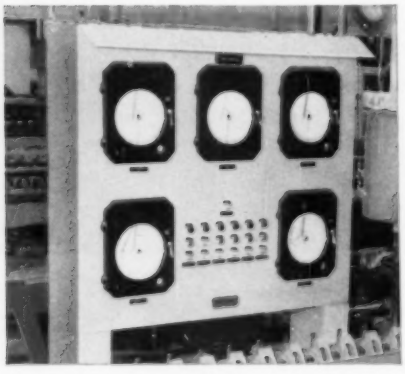


Picture shows two single duty Recording Temperature Controllers and two Flow Controllers. Together these instruments control the flow and temperature for the wash boxes.

AT Dan River Mills Inc., Danville, Va., they mercerize fancy dress goods, from tissue cloths to heavy rainwear, and they rely on Taylor instruments to control all three stages of this complex operation.

Close, automatic temperature control is all important in the processing of today's synthetic fabric blends, as is accurate twaddle control. In addition, Squeeze Roll Pressures must be accurately maintained and caustic concentration and level controlled. (Pictures show portion of control system).

Dan River is proud of the results it's giving them, and we're proud to have a hand in the production of such fine materials. Maybe you have a similar problem, or perhaps you only need one simple instrument. In either case your Taylor Field Engineer will be glad to advise you. Or, if you prefer, write Taylor Instrument Companies, Rochester, N.Y., or Toronto, Canada.

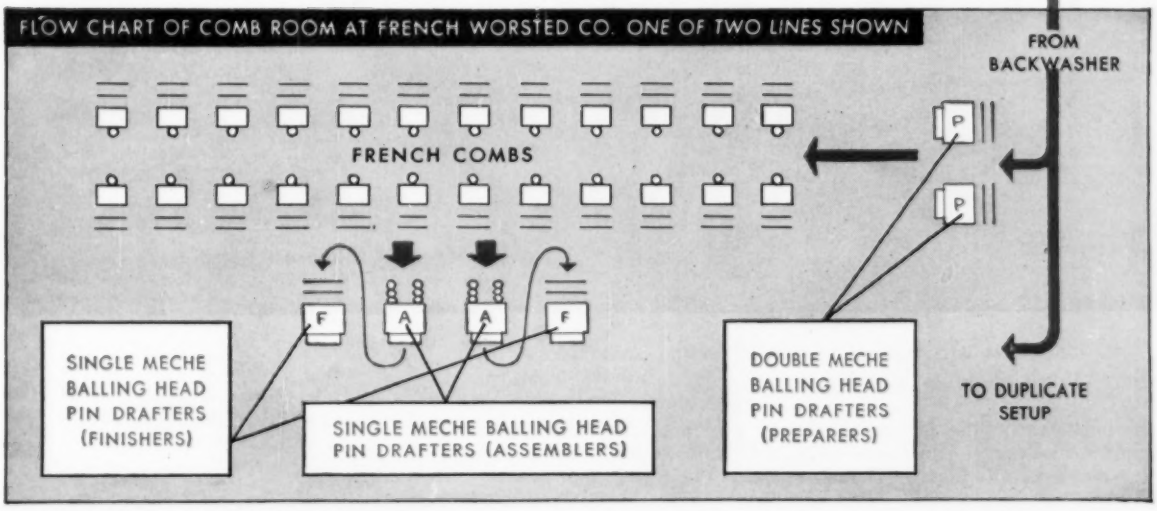


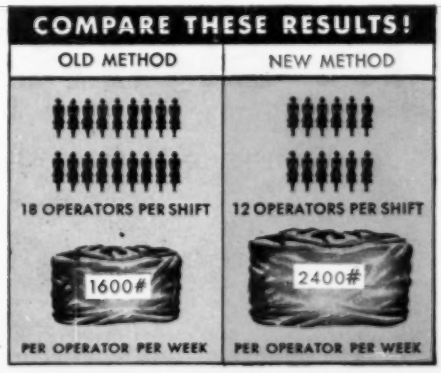
The Tenter washing system panel shows four Flow and Temperature Controllers—one for each section. Alarm system warns operator should flow become inadequate. Center instrument is a Vacuum Recorder.

Taylor Instruments **MEAN ACCURACY FIRST**

Pin Drafters® used prior to combing

AT FRENCH WORSTED COMPANY





Pin Drafters in use at French Worsted Co. prior to combing.

Also used in finishing—As a main part of their modernization program, French Worsted Company of Woonsocket, Rhode Island, installed 12 Warner & Swasey Pin Drafters—4 Pin Drafters replacing heavy duty gill boxes immediately after backwashing operations, and the remaining 8 installed for finishing operations following combing.

In less than 18 months this Pin Drafter modernization program has convincingly paid off with these results:

- **50% more production.**
- **Quality greatly improved. Eight daily tests on every lot prove one official's statement, "Our tops are now among the very best in the country."**
- **Heavier packages reduce creeling and other handling. Sales packages, of the same size, now weigh almost twice as much as previous bales.**
- **Noilage reduced ¼ to ½%.**
- **One-third fewer operators required—job assignments were also increased 25% on the combs.**
- **Low maintenance—thousands of dollars saved in aprons and fallers.**

If you'd like to know more about how this unique application of Pin Drafters can cut costs and improve quality in your mill, call in our nearest Field Engineer and get the complete story.

®Reg. U. S. Pat. Off.

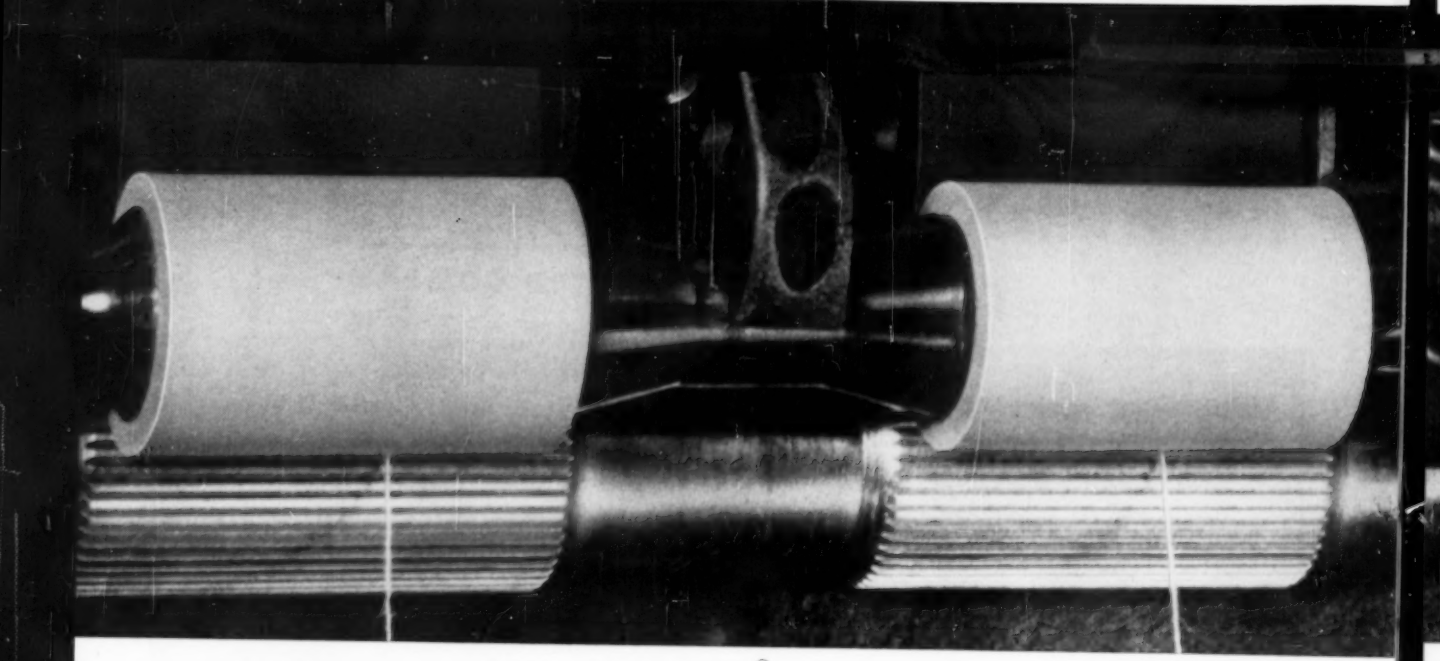
SALES OFFICES

Main Office and Factory: 5701 Carnegie Ave., Cleveland 3, Ohio

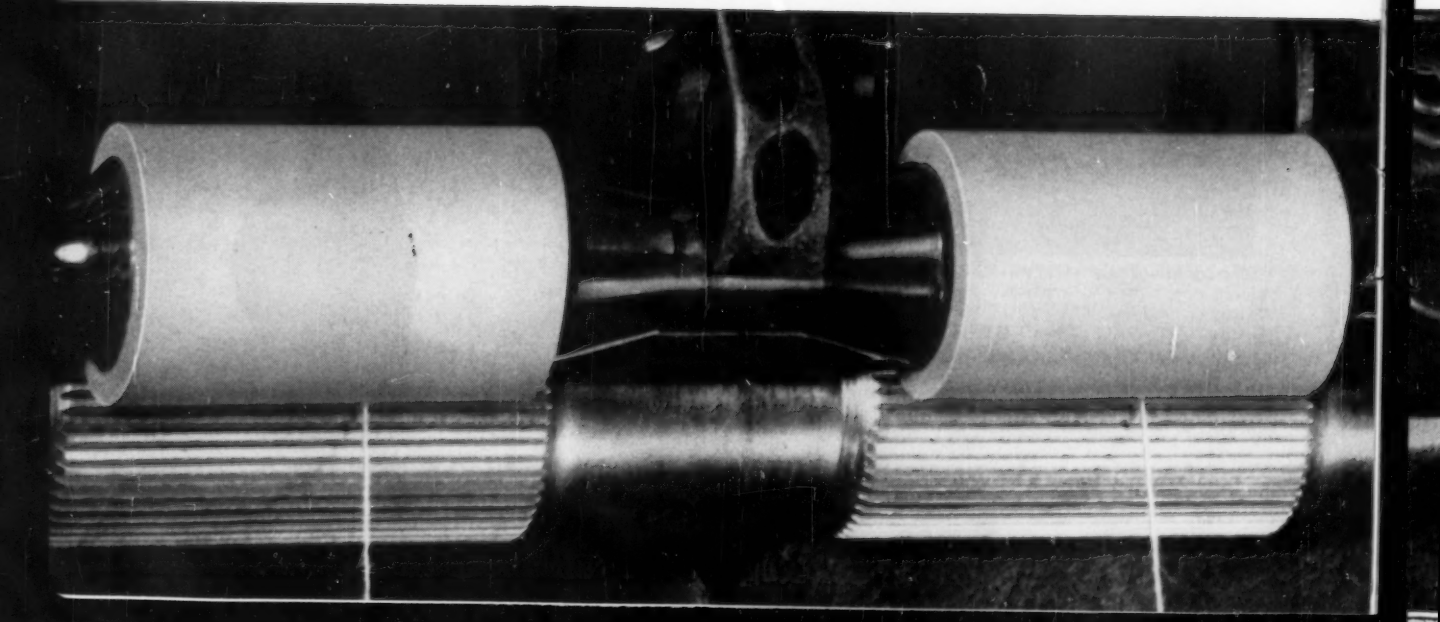
61 Rivulet St., North Uxbridge, Mass. — 121 11th St., N.E., Atlanta 3, Ga.

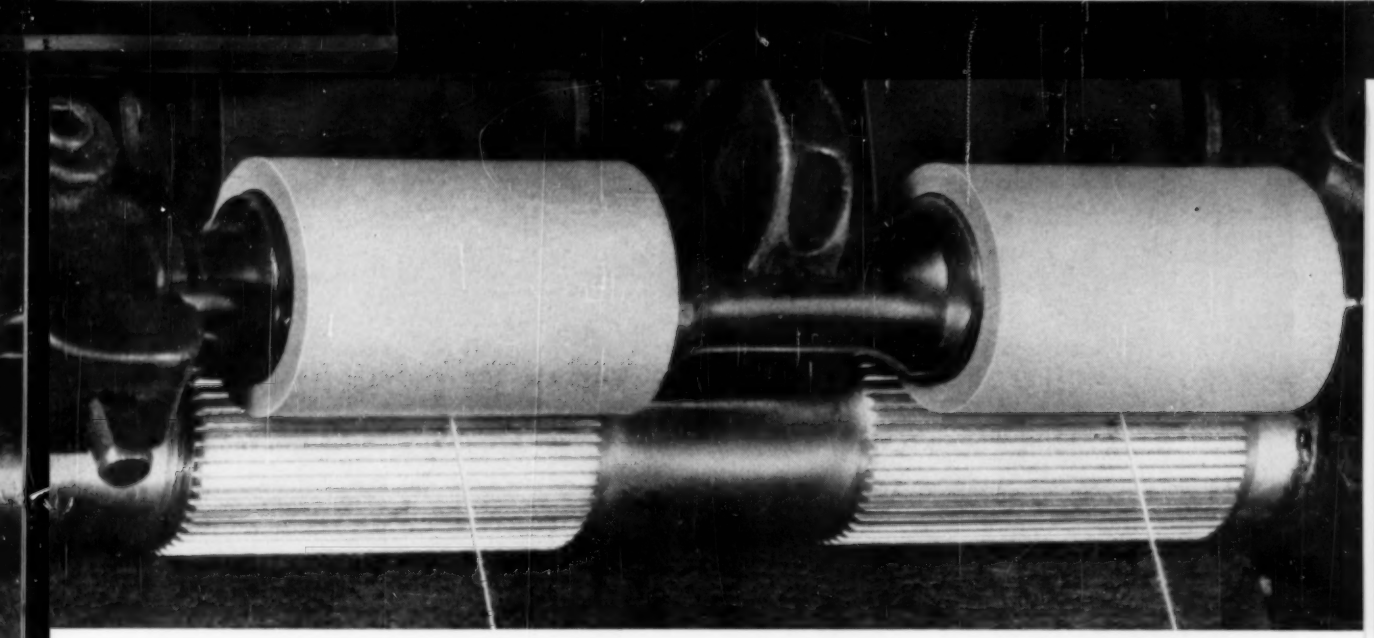
6910 Market St., Philadelphia, Pa. — 1820 Browning Ave., Charlotte, N. C.

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS . . . WITH A WARNER & SWASEY



Not a lap-up in sight !





ARMSTRONG J-490

ACCOTEX® COTS REDUCE

LAP-UPS...NO MATTER

WHAT YOU'RE SPINNING

Are you spinning natural fibers? Synthetics? Blends? In any case, Armstrong J-490 Cots help prevent front roll lapping—and turn out strong, uniform yarn year after year.

J-490 Cots are made of a patented synthetic rubber material that eliminates the basic cause of lapping—electrical attraction between cot and fiber. The J-490's built-in electrolytes actually tend to repel broken ends.

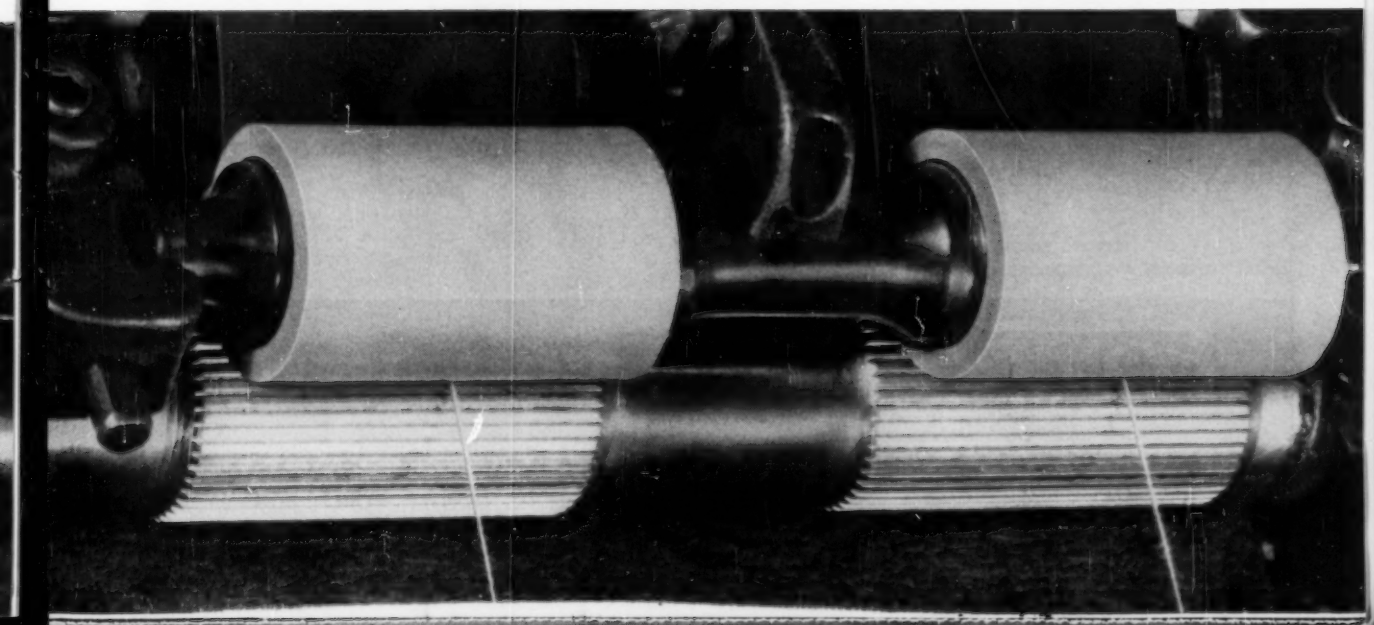
J-490 Cots are also exceptionally smooth and clean running. There are no rough fillers to pull short fibers from stock and cause excessive end breakage. An occasional re-buffing keeps the J-490 spinning like new.

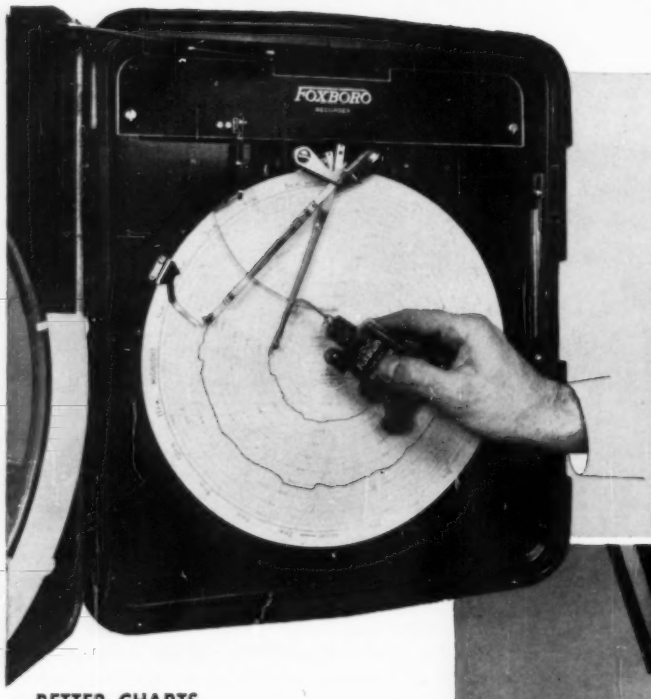
Your Armstrong man will be glad to set up a test side of these cots. Ask him about it. Or write to Armstrong Cork Company, Industrial Division, 6501 Dauphin Street, Lancaster, Pennsylvania.

P. S. If eyebrowing is a problem in your spinning room, try the Armstrong NO-742-S Cot. It has a "constant friction" surface that packs waste well back under the clearers and stops eyebrows from forming.

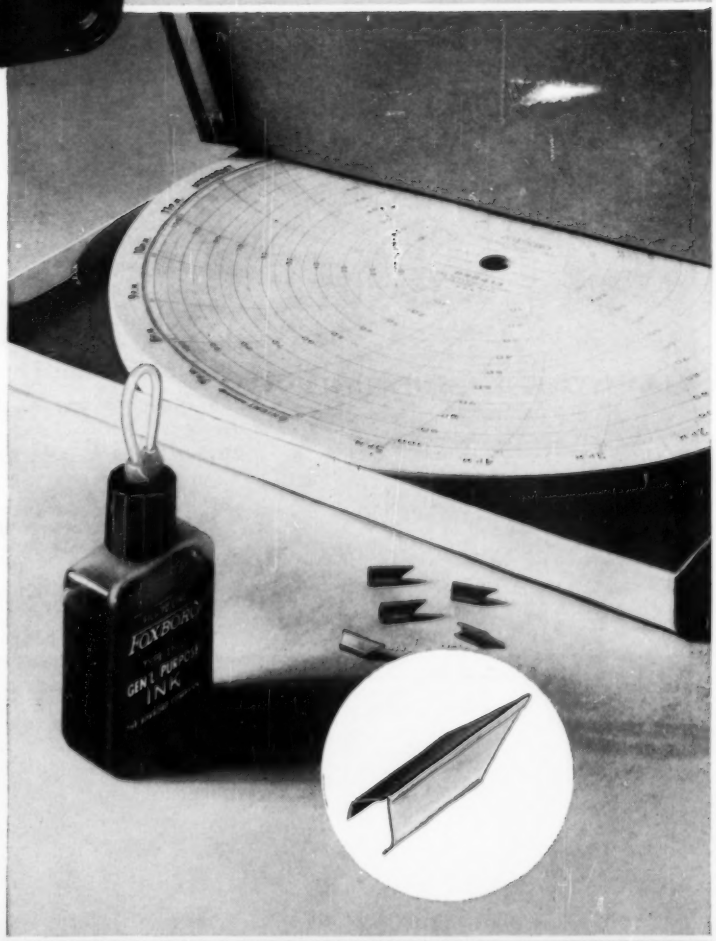
Armstrong ACCOTEX COTS

. . . used wherever performance counts





Better Records



BETTER CHARTS

Humitex Charts printed from high-precision plates, under controlled humidity conditions, on special, high-stability paper. Easy-to-read gray printing against chart's smooth, white background brings out full brilliance of new Foxboro Ink.

BETTER PENS

Non-corroding, stainless-steel pens with positive capillary feed. Controlled special-process points (standard and fine line) assure sharper, cleaner records.

BETTER INK

Five rich, brilliant colors . . . won't clog or "feather" . . . sediment-free . . . flows smoothly under all atmospheric conditions. Specially formulated for new Foxboro Pens and Charts.

NEW INK DISPENSER

Exclusive-design, easy-to-handle polyethylene "squeeze" dispenser (pat. pend.) gives pin-point control of drop size, ends messy pen-filling. Won't leak or break.

THE FOXBORO COMPANY
841 NEPONSET AVE., FOXBORO, MASS., U.S.A.

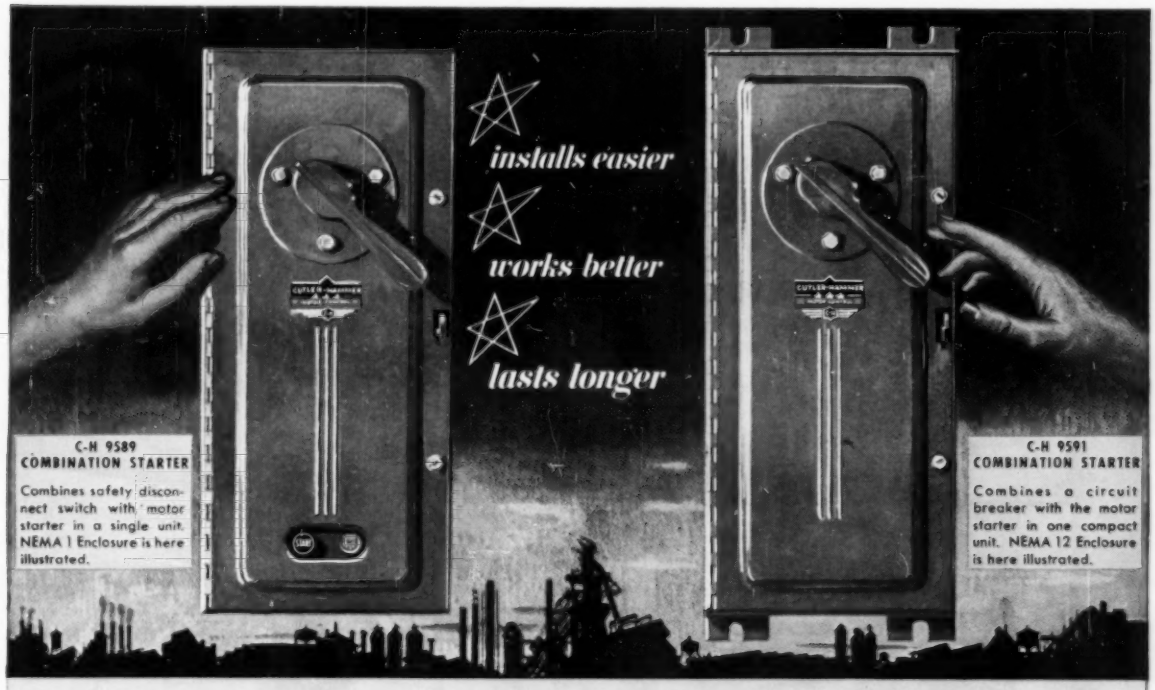
FOXBORO REG. U. S. PAT. OFF.

FOR BETTER RECORDS

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND

For more information, write direct or use Reader-Service post card.

New Cutler-Hammer Three-Star Combination Starters offer industry important new economies


installs easier
works better
lasts longer
C-H 9589
COMBINATION STARTER
Combines safety disconnect switch with motor starter in a single unit. NEMA 1 Enclosure is here illustrated.
C-H 9591
COMBINATION STARTER
Combines a circuit breaker with the motor starter in one compact unit. NEMA 12 Enclosure is here illustrated.

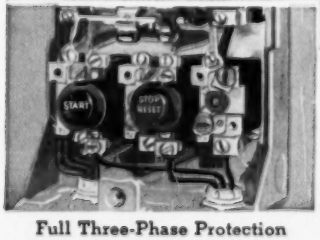
Convenience and economy are basic advantages of combination starters. Users everywhere say the new Cutler-Hammer ★ ★ ★ Combination Starters bring these basic advantages to new high levels of importance. Contact life is so amazingly improved that maintenance care is *never* needed in all normal uses. Adjustable load sensing coils permit motors to work at top capacity without hazard to provide maximum production without needless work interruptions. And the widely praised Cutler-Hammer exclusive, full three-phase overload protection in standard combination starters, is optional at slight additional cost.

The three silver stars stand for three new standards

CUTLER-HAMMER
★ ★ ★
MOTOR CONTROL
C-H

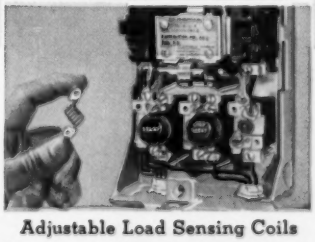
Compare the performance and economies of these remarkable new Cutler-Hammer Three-Star Combination Starters with any you have ever known. Cutler-Hammer Bulletin 9589 Combination Starters incorporate rugged disconnect switches of advanced design (fused or unfused). Cutler-Hammer Bulletin 9591 Combination Starters are equipped with circuit breakers. Your nearby Cutler-Hammer Authorized Distributor is stocked and ready to serve you. Order from him today.

CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wisconsin.



Full Three-Phase Protection

Only *three* overload relays can give complete three-phase protection to avoid motor burn-outs and their costly interruptions to production. And *only* Cutler-Hammer offers this complete three-phase protection in standard combination starters. You pay only for the third relay, nothing extra for special engineering or special enclosures.



Adjustable Load Sensing Coils

The accurate adjustment of overload protection permits motors to work harder without damage to motor windings. This is more important than ever with the newer type small frame motors. Adjustable load sensing coils in these new starters provide 3% loading accuracy instead of the 10% to 12% accuracy in competitive control.

Superlife Vertical Contacts

Experienced control users insist on dust-safe vertical contacts. And now the famous Cutler-Hammer vertical contacts have been doubly improved. First, their new lightweight design cuts bounce to reduce arcing. Second, any arcing that might occur is now pressure-quenched. Compare performance and see the difference.

For more information, write direct or use Reader-Service post card.

Outdoors? Certainly! Trane CenTraVac

Here is water chilling equipment so compact, so easy to install so *dependable*, you can install it anywhere—even outdoors. It's the TRANE CenTraVac, *hermetic* water chiller for comfort or process air conditioning.

No wonder TRANE CenTraVac sales continue to climb. *Look at these exclusive features!*

True hermetic design permits outdoor installation—gives greater dependability for every type of installation. No shaft seals to cause Freon loss. No gear box, no heavy thrust bearings and no couplings to require constant attention and maintenance.

Automatic, unattended operation. No need for full-time supervision. Push a button to operate . . . from there on the CenTraVac starts, stops and modulates automatically.

No multi-level base required. Install the CenTraVac outdoors or inside, on any level surface strong enough to support its weight.

CenTraVac in this photo is actual outdoor installation. Details on request.

SPECIFY MATCHED TRANE PRODUCTS

Reciprocating Compressors
Smoother, quieter, longer-lasting, direct-drive units, 10 to 150 tons capacity.

Cold Generators
Packaged water chillers from 10 to 150 tons capacity. Installed quickly.

Climate Changers
Complete factory-built air handler. Available from 600 to 29,000 cfm.

For heating, cooling, ventilating . . .
For any air condition, turn to

TRANE

MANUFACTURING ENGINEERS

The Trane Company, La Crosse, Wis. • Eastern Mfg. Div., Scranton, Pa. Trane Company of Canada, Ltd., Toronto • 90 U.S. and 17 Canadian Offices

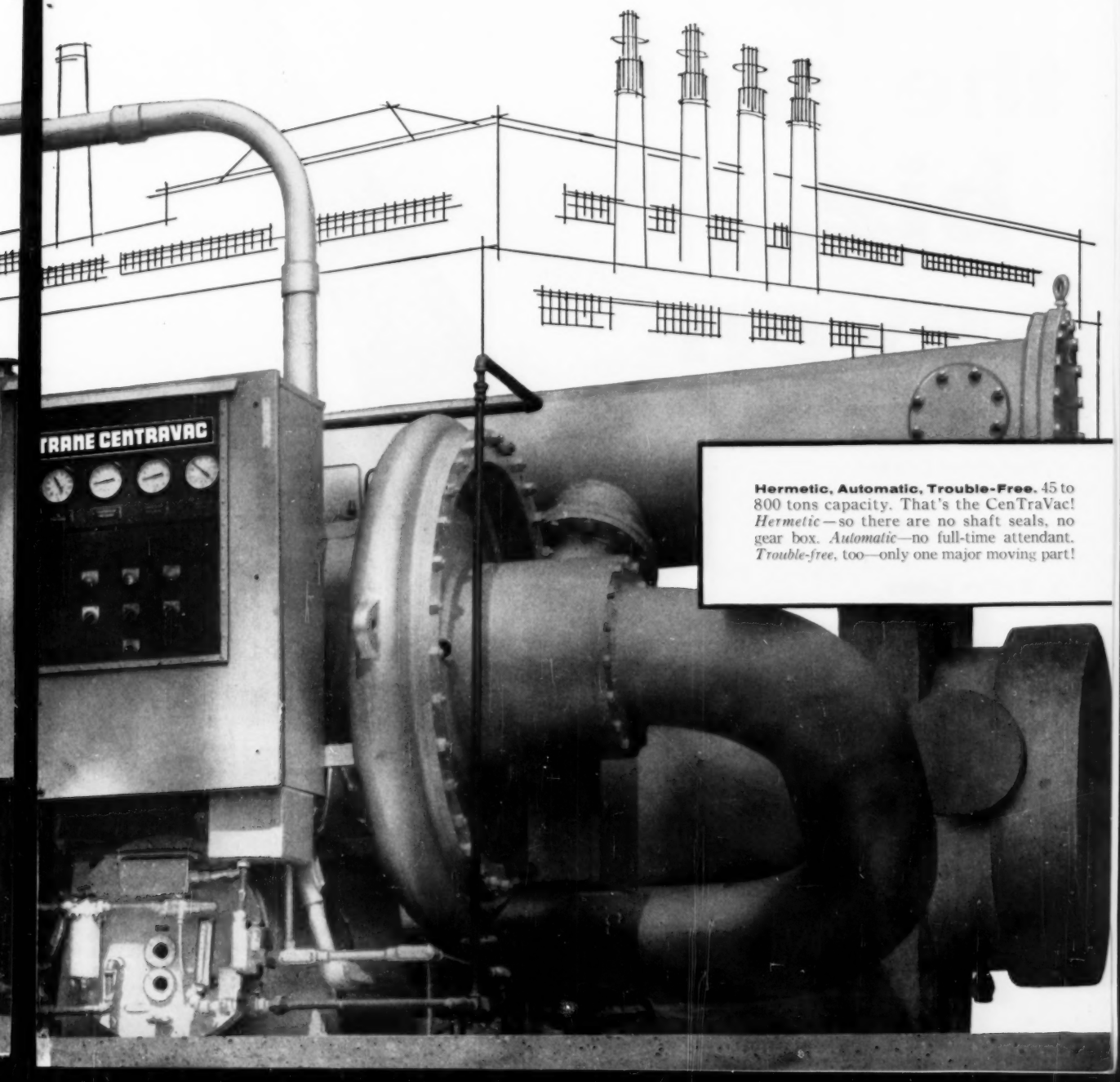
you can install water chiller anywhere!

Easy installation, less maintenance. The CenTraVac is *factory aligned*. No field alignment! Installation is easier, operation smoother. And there is far less maintenance. The CenTraVac has only *one* major moving part, only *two* main bearings . . . and operates only when full oil pressure is applied to *both* bearings.

Modulation to 10% of capacity. The CenTraVac automatically adjusts its use of power in almost direct ratio with the cooling load—from 100% down to 10% of capacity. You can provide for partial-load operation without the need for manual adjustment . . . without the usual penalty in operating costs.

Complete size range. 45 to over 800 tons water chilling capacity. And all commonly used combinations of compressor, evaporator and condenser are covered by *complete performance tables* in CenTraVac literature.

Want *more* facts? Just call your nearby TRANE Sales Office, or write TRANE, La Crosse, Wisconsin.

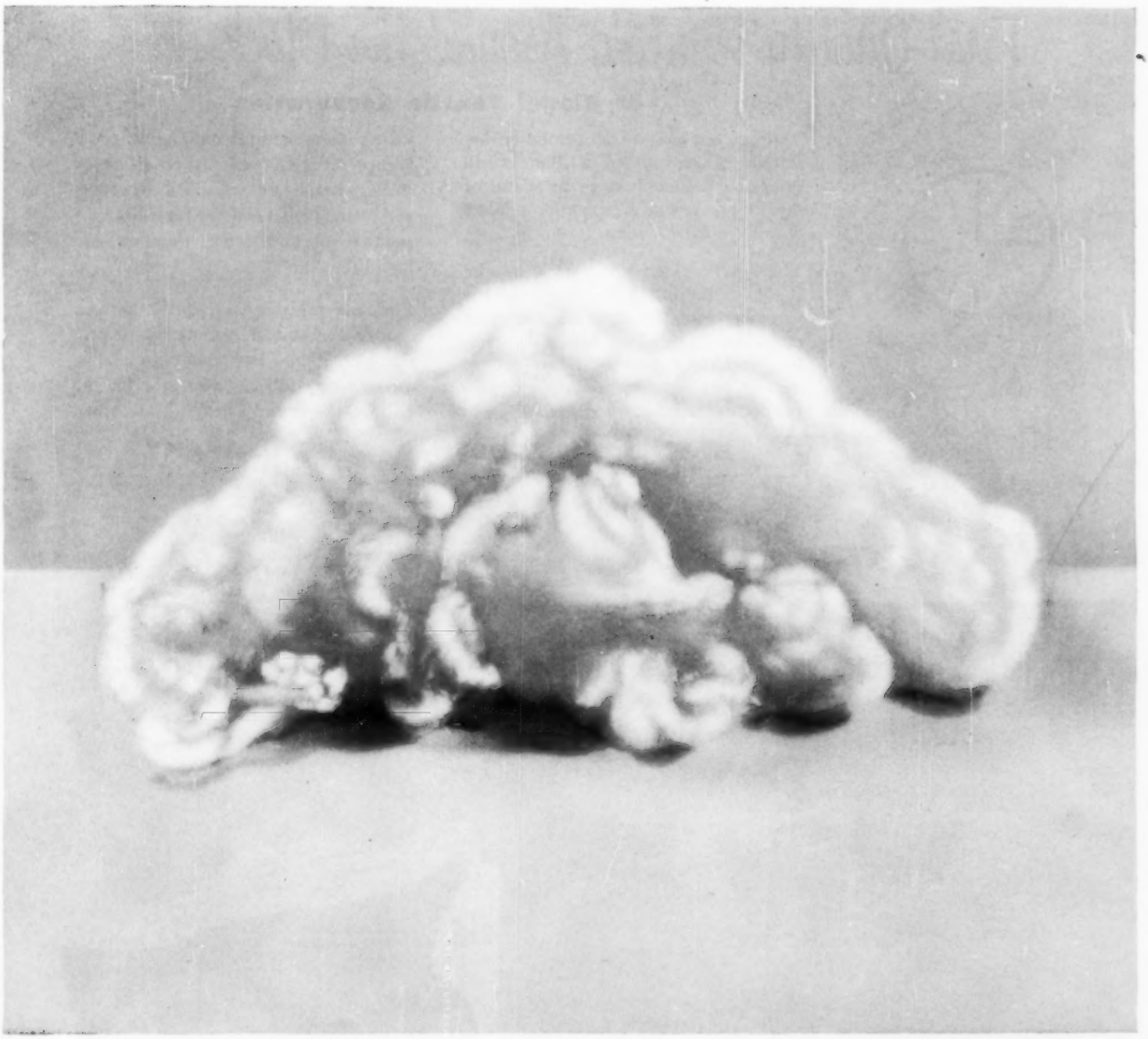


Hermetic, Automatic, Trouble-Free. 45 to 800 tons capacity. That's the CenTraVac! *Hermetic*—so there are no shaft seals, no gear box. *Automatic*—no full-time attendant. *Trouble-free*, too—only one major moving part!

the big seven

1. Brighter Luster
2. Lower Dye Costs
3. Better Crimp
4. Greater Resistance to Abrasion
5. More Resiliency with Less Crushability
6. Greater Strength
7. New Economy for You

THE NEW



Put new life in your product... bring new products to life

Nylon Staple

I·R·C

The NEW Nylon Staple, produced by IRC, has spurred creative activity in a wide range of industries. This great new fiber, capable of giving a product seven unique, highly desirable qualities, can be the means of developing important new products, or product improvements for you.

IRC's technical staff is available to work with your people, to put the Big Seven to work for you. Call us.

Industrial Rayon Corporation. Sales Offices: 500 Fifth Avenue, New York 36, N. Y. 627 Guilford Bldg., Greensboro, N. C.

First Quality Printing Around the Clock ...

at Riegel Textile Corporation

"All day, any day, we can get top quality printing results with our two Butterworth Printing Machines," states an official of the Riegel Textile Corporation's Ware Shoals (S. C.) Division.

The heavy cast-iron frames of the Butterworth Printing Machine assure less vibration. Fibre fitting gears give quiet operation. There's long life in the stainless steel color pans . . . easy control through motor-driven oscillating motion for doctor blades . . . and flexibility and variety in the multiple patterns and small figure designs, with up to 14 color shades, which are registered accurately and easily. Nylon-bristled furnisher rolls assure evenness of color, cleanliness and long life.

For true register . . . quick pattern change . . . smooth, uninterrupted production . . . and low maintenance costs, let a Butterworth engineer give you details on Butterworth Printing Machines.

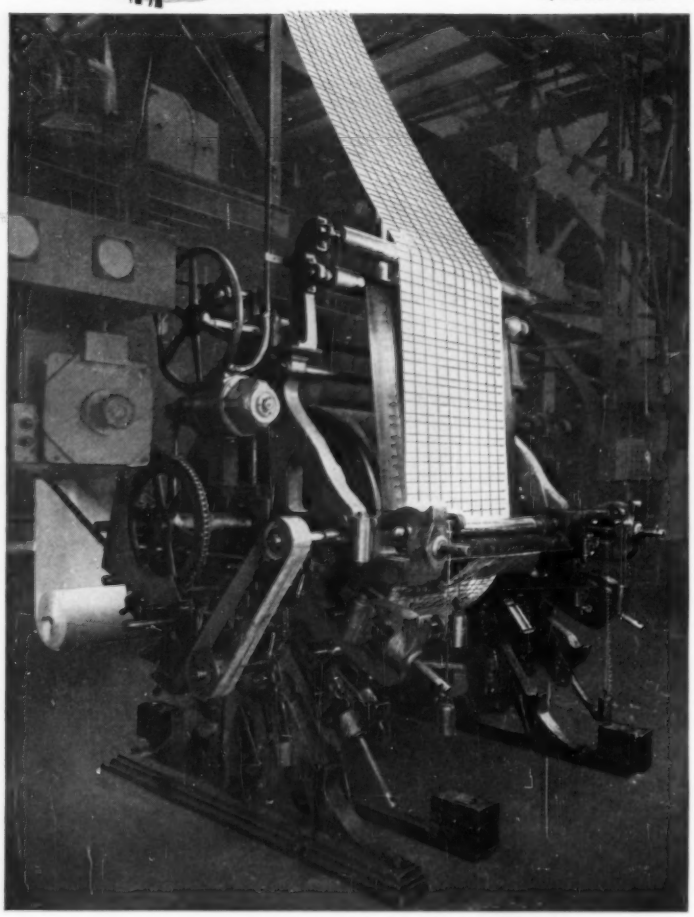
H. W. BUTTERWORTH & SONS COMPANY

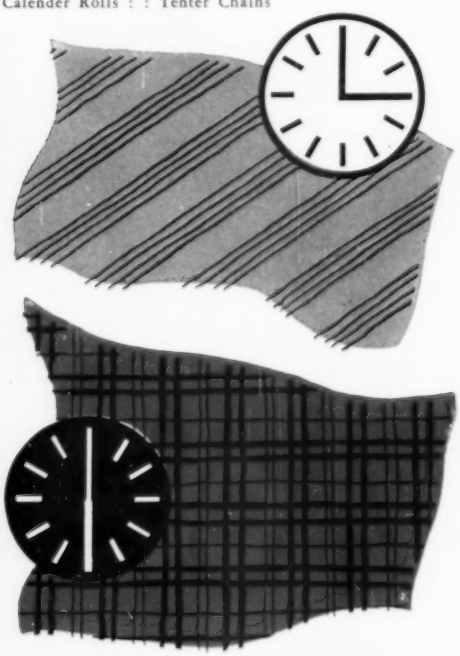
Bethayres, Pennsylvania

1211 Johnston Bldg., Charlotte, N. C.
187 Westminster St., Providence, R. I.

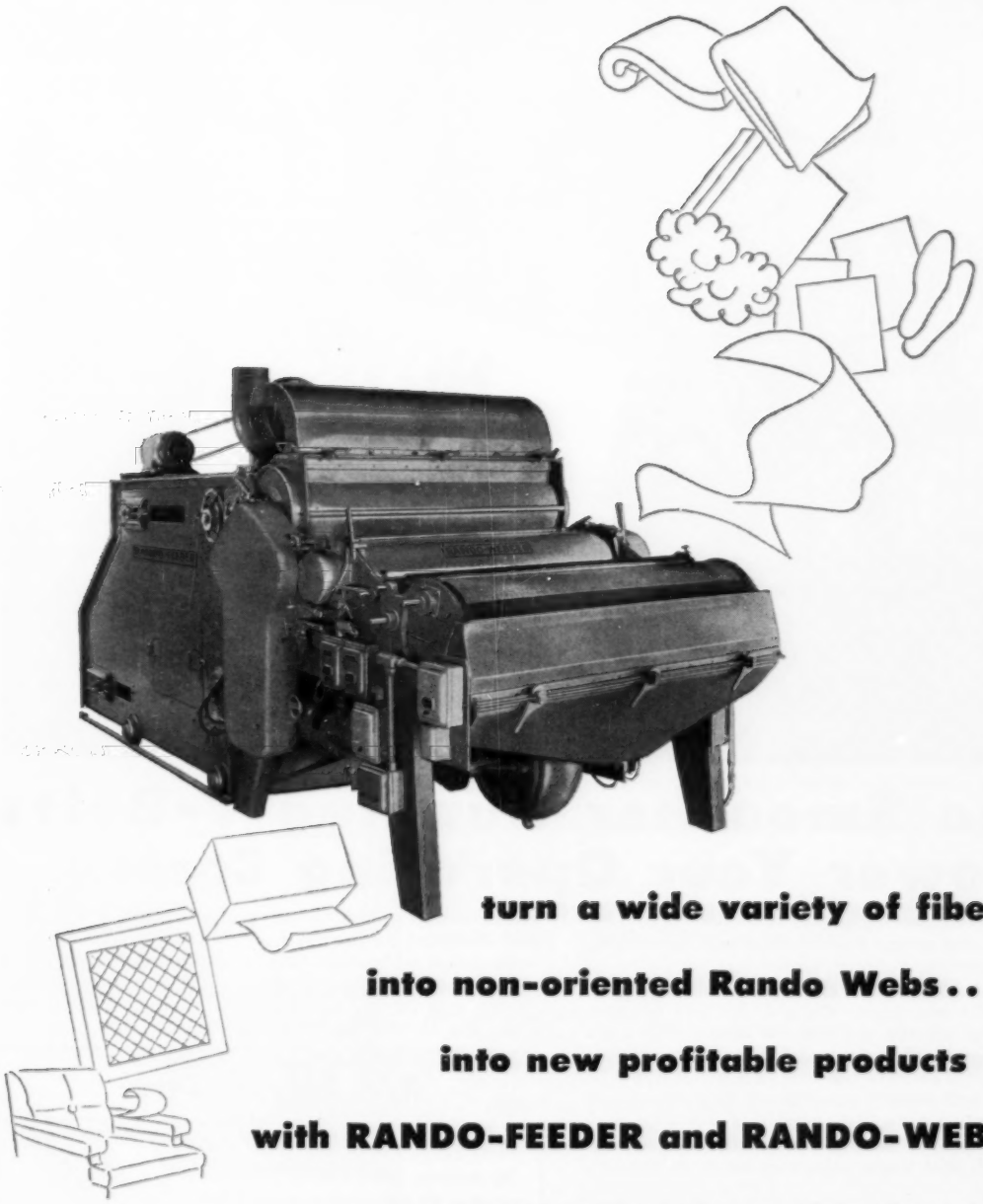
Representatives in Principal Cities of the World

Machines for Bleaching, Boiling-Out, Dyeing, Mercerizing, Finishing & Embossing : : Pot Spinning Machines for Synthetic Fibers : : Calender Rolls : : Tenter Chains





One of the two new Butterworth Printing Machines at Riegel Textile Corporation, Ware Shoals Division, Ware Shoals, S. C. Machines are equipped for high speed operation, and print all of the mill's lightweight broadcloth. Material here being printed is a heavy poplin with multiple stripes.

For more information, write direct or use Reader-Service post card.

turn a wide variety of fibers...

into non-oriented Rando Webs...

into new profitable products

with RANDO-FEEDER and RANDO-WEBBER

The RANDO-WEBBER in conjunction with the RANDO-FEEDER produces a continuous, uniform non-woven web with random orientation of fibers and square, even selvage over a wide range of fibers and thicknesses of webs, without cross lapping or laminating.

Inquiries are invited. Write for new Bulletin No. 104.

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CORPORATION

EAST ROCHESTER, NEW YORK

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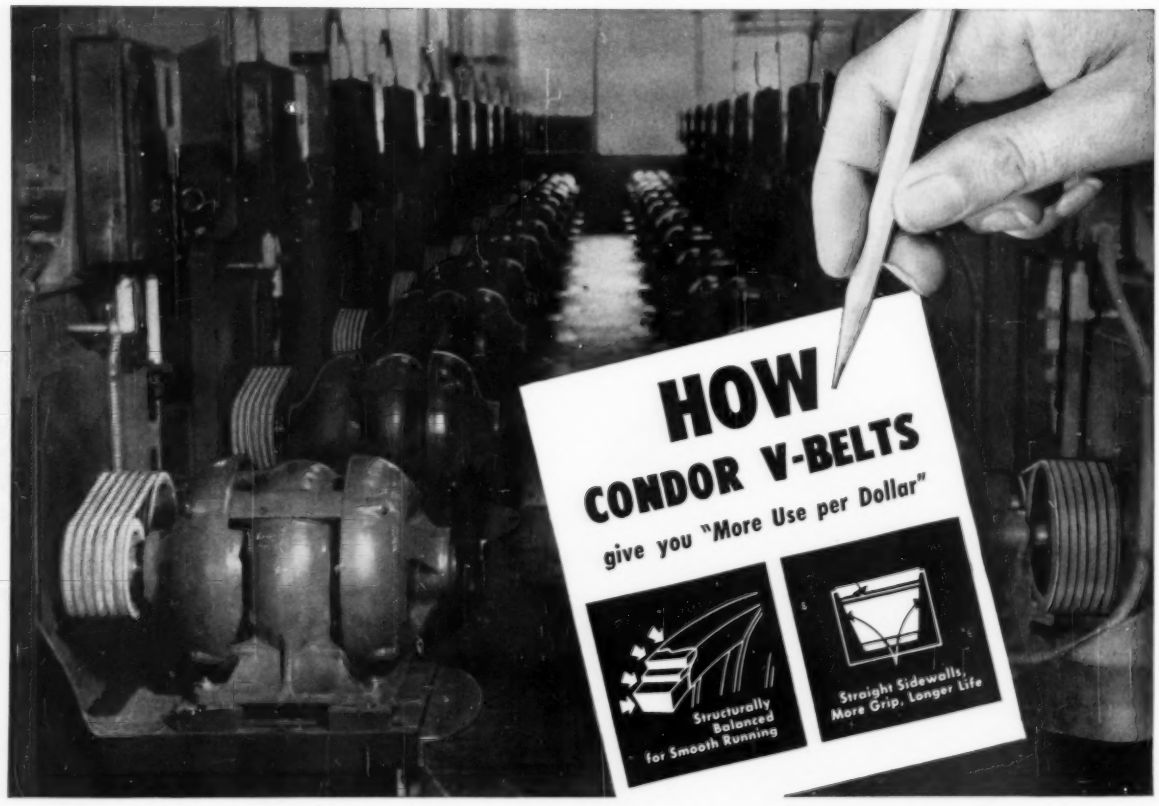

HOW
CONDOR V-BELTS
give you "More Use per Dollar"
Structurally Balanced for Smooth Running
Straight Sidewalls, More Grip, Longer Life

These Smoother Running V-Belts Lower Your Operating Costs

Condor V-Belt engineering makes the difference. The strength member is micro-positioned in heat dissipating rubber for a smoother running, cooler running drive . . . for longer life with the heaviest power loads. Condor V-Belt sidewalls are made *straight* to put positive pressure on the sheave grooves for more grip . . . less slip. Straight sidewalls help support the super-strength synthetic cords of the belt in a straight line so that *all* cords pull equally . . . deliver their maximum share of power. Controlled length is accomplished through prestretching during manufacture to remove inelastic stretch that might otherwise occur on the job.

NOW . . . Moisture-Proof Vacuum Packaging

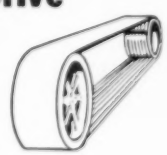
R/M's exclusive new vacuum sealed moisture-proof packaging assures positive V-belt length control for users of longer lengths in C, D & E cross sections! Belts are measured at the factory under controlled humidity and identified for precise matching. They are then vacuum-sealed in moisture-proof aluminum lined bags. The result—no shrinkage or elongation in storage . . . sustained uniformity on the drive! Length is certified from the factory to the field.

R/M Poly-V* Drive

A New Belt Drive Concept For Heavy-Duty Power Transmission. Eliminates V-belt matching problems. Delivers up to 50% more power in the same space as regular V-belts or equal power in less space.

Write for copy of Poly-V Drive Bulletin #6638.

(*Poly-V is a registered Raybestos-Manhattan trademark)



RM-505

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HOW STAINLESS STEELS BOOST DAY-TO-DAY SAVINGS in textile production

Crucible Rezistal® Stainless Types for Textile applications

STAINLESS TYPE	NOMINAL % Cr	Ni	Other	USED FOR
302	18	8		General Purpose
303	18	8	S	Free-machining
304	19	9	Low C	Welding
309	25	12		High Temperature
310	25	20		Higher Temperature
316	18	12	Mo	High Corrosion-resistance
317	19	13	Mo	Higher Corrosion-resistance
318	18	12	Mo, Cb	Welding (stabilized)
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To plant and mill operators, stainless steel is not a luxury metal—but the most economical construction material they can use wherever there's need for its exceptional corrosion-resistance, strength and cleaning ease.

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See how stainless steel can boost day-to-day savings in your plant. Get practical, economy-minded advice on stainless selection, fabrication and maintenance in your free copy of "Making the Most of Stainless Steels in the Textile Industry." Send for it today. Or call your local Crucible representative. *Crucible Steel Company of America, Henry W. Oliver Building, Pittsburgh 22, Pa.*

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"To provide the Textile Industry with the best in Goods and Services." This has been our motivating force since 1831 . . . one hundred twenty-five years ago.

THE IDEAL

The preservation of this Idea will continue to be our Ideal . . . as it moves forward with the vital and progressive Textile Industry.

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Manufacturers of Machinery for all Major Fibres: Opening, Picking, Carding, Combing, Drawing, Roving, Spinning, Twisting, Winding, and for many other processes.

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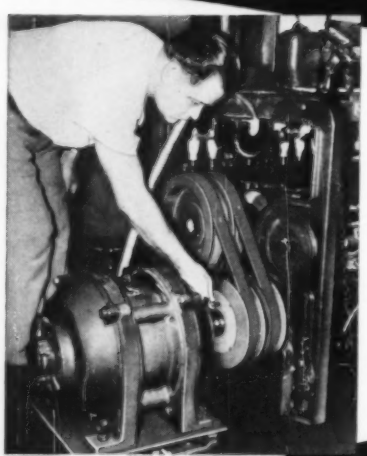
Now--

Pre-set the Pitch Diameter



COMPONENTS OF
DODGE SPINNING FRAME DRIVE

- Variable Sheave with Automatic Pitch Diameter Gage
- Taper-Lock Companion Sheave
- Slide Motor Base
- Dodge Sealed-Life Belts

No more "cut and try" with the new Dodge Variable Sheave

An automatic Pitch Diameter Gage, graduated in tenths of an inch, is mounted on the outside flange of the new Dodge Variable Sheave. A spiral line on the hub intersects with the gage dial as the flanges are moved in or out. Pitch diameter is read directly on the dial.

Quickly . . . accurately . . . easily . . . you get the pitch diameter you want with a one point adjustment. The variable sheave locks as a unit when tightened on the shaft, utilizing the Taper-Lock principle.

Single or double strand drive

The Dodge Variable Sheave is available for both single or double strand drives — utilizing R-Section Sealed-Life V-Belts in the single or double strand and W-Section in the single strand only. The new, higher ratings of these belts, which contribute to the larger load carrying capacity of the Dodge Variable Speed Drive, open new opportunities for drive economy — both in initial cost and in maintenance. All components — the new sheave, companion sheaves, belts and motor base — are available from stock. Write for full details.

DODGE MANUFACTURING CORPORATION, 1400 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.

Call the Transmissioneer, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable assistance on new cost-saving methods. Look for his name under "Power Transmission Equipment" in your classified phone book.

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LQ600 VALVES

STAND UP WHERE OTHERS FAIL!

In four years of actual field tests, conducted by nearly 100 cooperating companies, NOT ONE LQ600 VALVE HAS EVER LEAKED OR FAILED.

LQ600
150 lb. S.P.
300 lb. W.O.G.

CHEMICAL PLANT

"LQ600 is still tight after three years on a very tough 150 lb. steam service installation where competitive valves used to leak in 2 weeks to 2 months."

MEAT PACKER

"We are writing to let you know how pleased we have been with the LQ600 Valves we put on our toughest lines. We installed these valves in three of the most difficult locations in our plant and have had trouble-free operation ever since they were installed."

HOSPITAL

"LQ600 is still tight and functions perfectly after 31 months of service on a water column blowdown installation where competitive valves failed by wire drawing in two months."

DISTILLERY

"An LQ600 Valve was installed for throttling service on a syrup line at 140°F. After 9 months the valve was removed for inspection. It was tight and in perfect condition. This valve was put into another test installation and is still tight."

DAIRY PLANT

"The LQ600 Valve was installed more than three and a half years ago on a steam line with rust and scale present at all times. This valve has withstood service conditions where others were replaced on an average of once a year due to seat and disc erosion."

* Patented Alloy

WRITE FOR Circular 602, a new four-page bulletin on the LQ600 Valve. Request it from your Lunkenheimer Distributor, or write The Lunkenheimer Company, Box 360, Cincinnati 14, Ohio.

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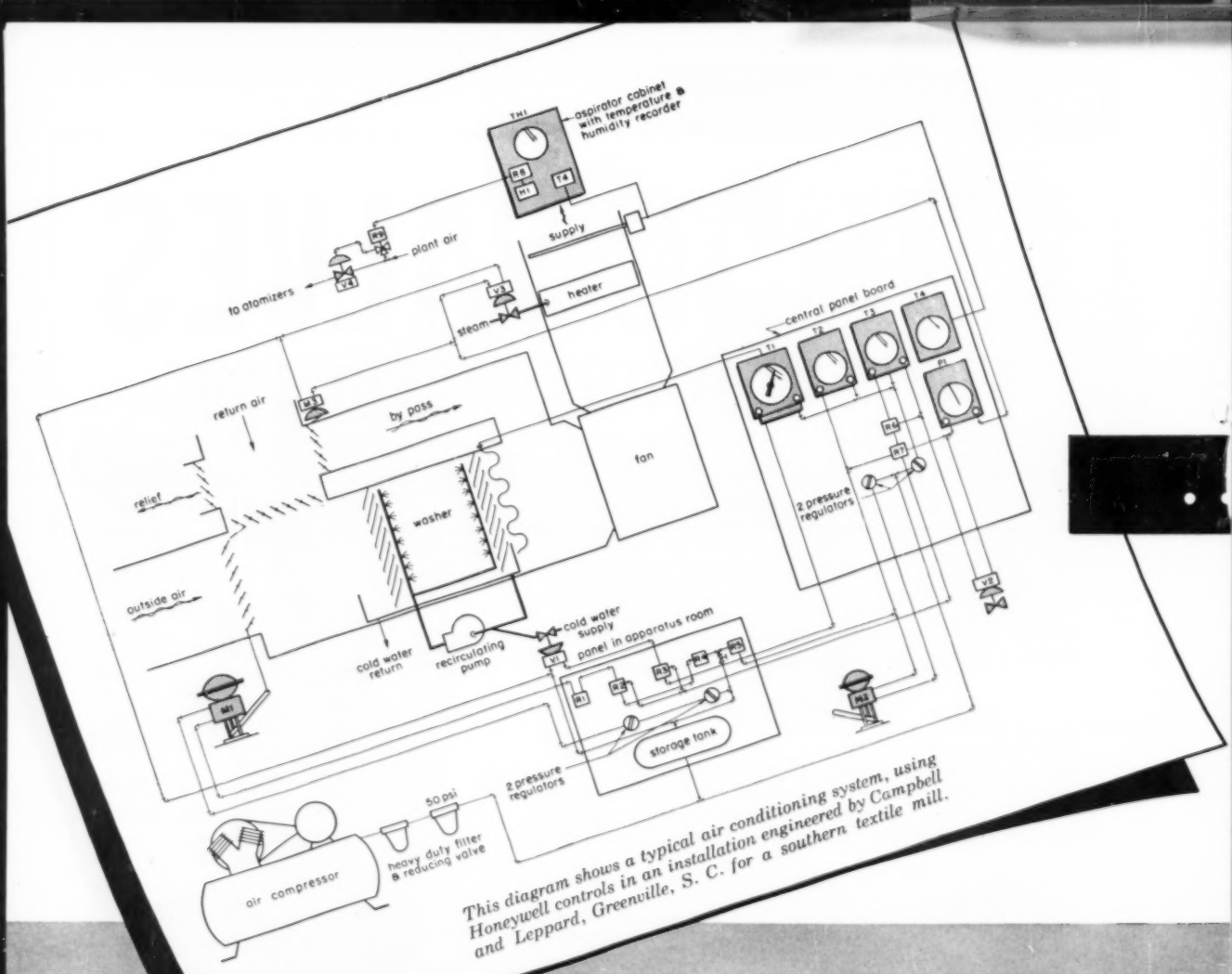
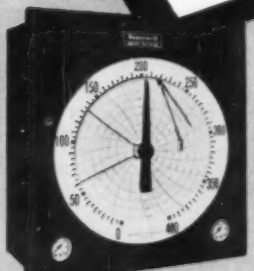
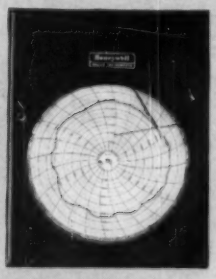


This diagram shows a typical air conditioning system, using Honeywell controls in an installation engineered by Campbell and Leppard, Greenville, S. C. for a southern textile mill.

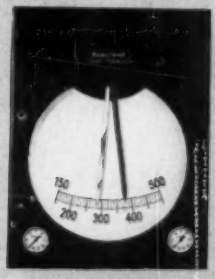
Honeywell controls for mill air conditioning:



***ElectroniK* Pneumatic Temperature Controller**



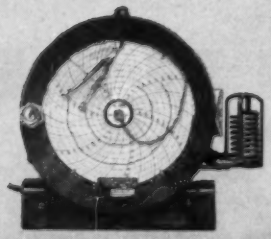
Brown Recording Thermometer



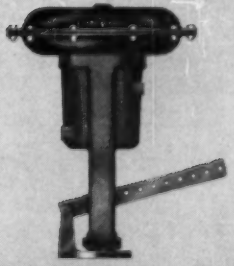
Brown Indicating Pressure Controller

Series 800 Diaphragm Control Valve

Brown Thermometer Recording Controller



Brown Humidity and Temperature Recorder



***Air-O-Motor* Valve Operators**

. . Insure your air conditioning investment

...*with a* Honeywell Control System

IT PAYS to be as particular about your mill's air conditioning controls as you are about process instrumentation. For the precision with which air temperature and humidity values are maintained determines how well you can capitalize on the inherent benefits of modern plant air conditioning. A well-designed system *must* include the best in control . . . to give you high uniformity of strength, pliability and related characteristics of yarn . . . stability of weather-sensitive wood and leather parts in shuttles, pickers and other machines . . . constancy of size formulas . . . production-boosting comfort for employees.

Honeywell repeatedly works in close association with the consulting and contracting engineers who specialize in the development of systems to meet the specific requirements of individual installations. And, Honeywell controls can be incorporated at any stage in the engineering of an air conditioning system. Instrumentation for temperature, humidity and pressure is designed by Honeywell specialists who are qualified to make recommendations by virtue of their familiarity with the needs of the engineering and contracting organization. This experienced staff works out every detail . . . down to valve plug characteristics, interlocks and signalling devices . . . to help provide an integrated control system that will perform at peak efficiency, with minimum operating and maintenance cost.

When you discuss air conditioning, make sure that your consultant or contractor has the complete Honeywell control story.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.—in Canada, Toronto 17, Ontario.

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MINNEAPOLIS **Honeywell**

BROWN INSTRUMENTS

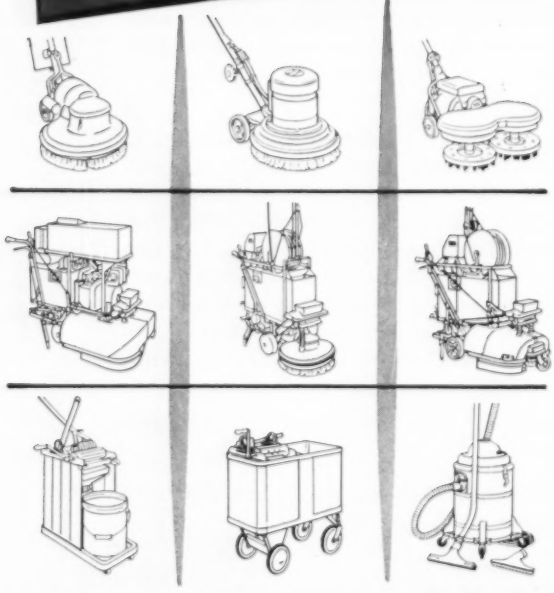
First in Controls

Keep your floor-maintenance men happy . . .

with Job-Fitted EQUIPMENT!

Choose from the COMPLETE Finnell Line

More than a score of models and sizes permits selection of the equipment that's exactly right for your job!



However much a maintenance man may want to do a good job, and at the same time show savings in labor costs, he's *stymied* if the machine is too small, or too large, or is otherwise unsuited to the job. Different floors and areas call for different care and equipment. That's why *Finnell makes more than a score of floor-maintenance machines.* From this complete line, it is possible to choose equipment that is correct in size as well as model . . . that provides the maximum brush coverage consistent with the area and arrangement of the floors.

Finnell makes *Conventional Polishing-Scrubbing Machines* in both concentrated and divided-weight types, each in a full range of sizes . . . a *Dry-Scrubber*, with self-sharpening brushes, for cleaning grease-caked floors . . . *Combination Scrubber-Vac Machines* for small, vast, and intermediate operations, including gasoline as well as electric models . . . *Mop Trucks* . . . *Vacuum Cleaners* for wet and dry pick-up, including a model with By-Pass Motor. In addition, *Finnell* makes a full line of fast-acting *Cleansers* for machine-scrubbing . . . *Sealers* and *Waxes* of every requisite type . . . *Steel-Wool Pads*, and other accessories — *everything for floor care!*

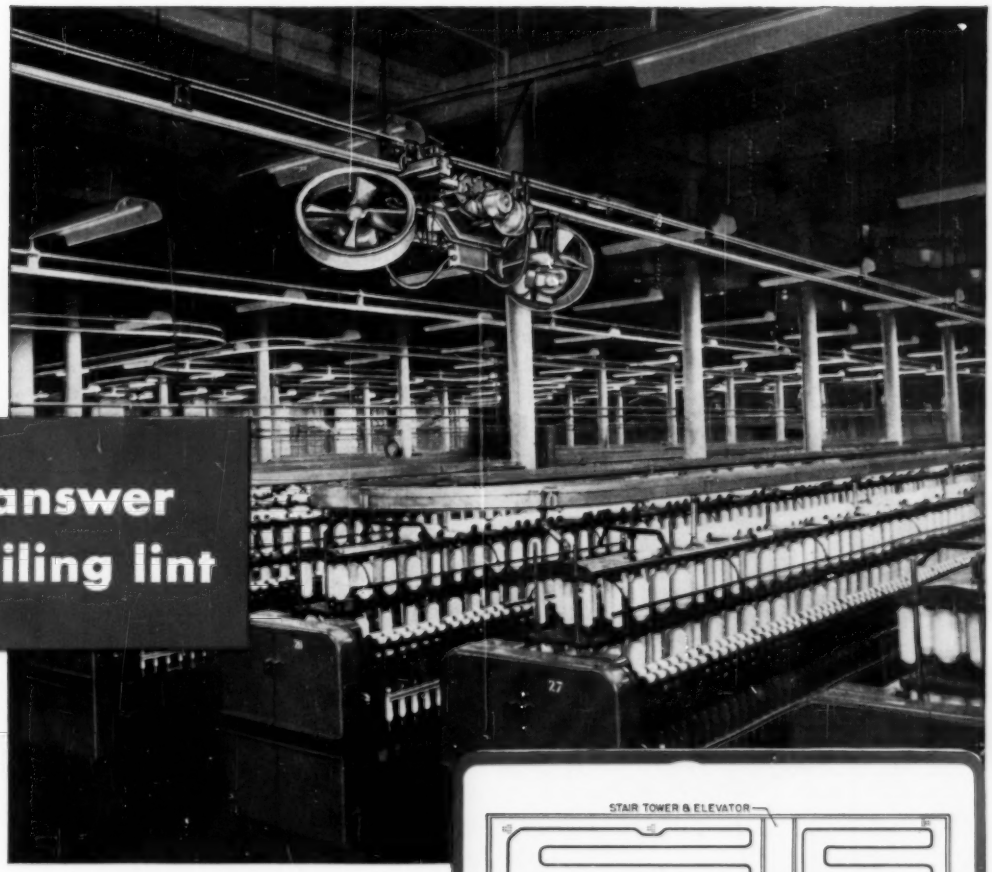
In keeping with Finnell policy of rendering an individualized service, Finnell *maintains a nation-wide staff of floor specialists and engineers. There's a Finnell man near you* to help solve your particular floor-maintenance problems . . . to train your operators in the proper use of *Finnell Job-Fitted Equipment and Supplies* . . . and to make periodic check-ups. For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1901 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

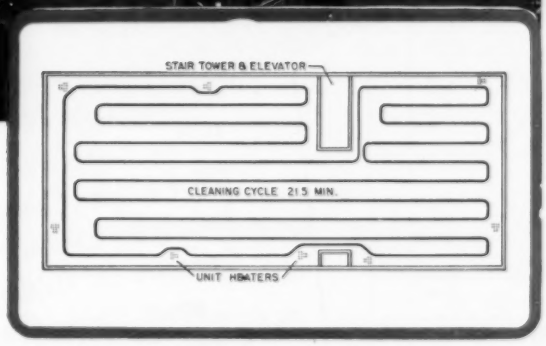
Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES



The answer to ceiling lint



Louden's Automatic Twin-Fan ceiling cleaner

More and more mills now keep their ceilings *continuously* clean and free of lint—by installing the Louden Twin-Fan Cleaner that cleans without disturbance to any processes going on in the machines below it.

The installation pictured above is typical. This is a spinning room in a well-known southern mill. The room is "blanketed" by 2800 feet of Louden track over which the Louden twin-fan—hence, *two directional*—ceiling cleaner travels continuously, making the trip once every 22 minutes.

The twin fans sweep on *both* sides of the track at once. Independently adjustable, each fan can be pointed in any direction, to suit the special needs of your room. They clean both sides of ceiling beams and other surfaces. The threat of "gout" or "slubs" is done away with, together with manual blowing down, or ladder climbing to adjust stationary fans. There are no dead air pockets, humidity is even throughout. You can have features such as automatic shut off and turn on for passage through areas where fan blowing is not wanted.

You can be sure of highest dependability, efficiency and economy because this is a product of Louden's long experience in designing and building overhead track and overhead equipment of every type.

Let a Louden engineering representative tell you what you need, and how much it will cost, what it will save. Write now, before you forget.

THE LOUDEN MACHINERY COMPANY

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A Subsidiary of Mechanical Handling Systems, Inc.

Louden

MONORAIL & CRANES

Since 1867—the first name in materials handling

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For the **TEXTILE** Industry

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- Silk Finishing Calenders
- Embossing Calenders
- Calenders for finishing woven plastic (Saran)
- Rubber Thread covering Machines
- Vinyl Embossing Calenders for Plastic Sheeting
- Seam and Slub Detectors
- Perkins new Electraumatic Seam Detector (for Shearing Machines)
- Cloth Pilers
- Special Drying Machines
- Mangles
- Padders
- Squeezers
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THE NEW FIDELITY 400 Knits them all...

and can be changed from plain to mesh fabric in just a matter of minutes.

This "versatile genius" employs a new patented principle . . . not simply an attachment but an integral part of the machine. No wonder people are calling the Fidelity 400 the outstanding development in circular hosiery in 30 years.

Manufacturers can now make their hosiery production as flexible as changing market conditions . . . produce top quality seamfree ladies' hosiery—plain, mesh, or stretch—at the push of a button!

Write for stocking samples today. Or stop in and see the new, electronically controlled Fidelity 400 in operation at our showroom.

Designers and Builders of Intricate, Automatic Precision Machines

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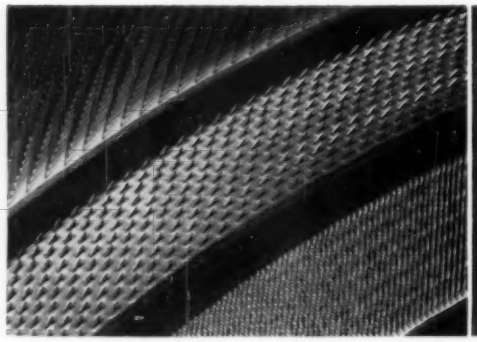

Ashworth Tips ON CARD CLOTHING

No. 25 in a Series

CARE OF CARD FEED ROLLS

There is an important relation of the feed roll to the quality of carding. Uniform detachment of fibres from the picker lap is not obtainable unless the entire assembly is in good mechanical condition.

The weighting arrangement of this member of the card lends itself to rapid wear of bearings and journals, if oiling is not attended to and oil holes kept open. Plucking of large tufts of fibre, resulting in the formation of neps and other irregularities in the sliver, can be expected if excessive wear is present.

Worn journals can be rebuilt to their original diameters; but care must be exercised should boring and bushing of the bearings be attempted, since there is a definite relationship between the bottom of the feed roll and the surface of the feed plate. Usually, when the roll, journals and bearings are new, there is .006″ to .008″ clearance between the roll and the surface of the plate. Repairs to bearings by boring and bushing should be undertaken with extreme care so as not to alter the clearance established by the manufacturer of the card.

Feed rolls should be properly weighted, with weight hooks straight and weights free from any interference from protruding bolts or nuts.

Flutes that are nicked and burred tend to accumulate fibre in the form of a roller lap. If allowed to build up, uniform pressure throughout the feed roll's length is not obtained. Those that have become rounded excessively, or where the grooves are too shallow, fail to exert an adequate "bite" and permit the lickerin to detach small tufts of stock without benefit of its combing action.

Where synthetic fibres are being carded, and because plucking to any degree is detrimental to quality and sometimes to card clothing as well, a feed roll wound with a special flat top wire will be found to operate to the mill's advantage. Designed to afford a slight penetration into the lap, it increases fibre friction and, by reason of the direction in which the teeth point, exerts a holding action that enables the lickerin to function more effectively.

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
E. G. Pawles, Representative — Los Angeles, Calif.
*Factory †Repair Shop ‡Distributing Point
3 Factories • 6 Repair Shops • 7 Distributing Points

PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed.

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Ashworth PIONEERS IN CARD CLOTHING

3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

The LONG-RANGE VIEW

Parable of the Meadow

There was a man in the West who owned a meadow of fertile ground. By steady toil, he grew wealthy, and his herds multiplied, and he gave his sons and daughters in marriage to any who came and lived in his land and worked the meadow.

At last his green fields became the envy of his neighbors, and the neighbors set up a great clamor for him to pull down his fences so that they might also graze their herds on the green meadow nursed so carefully by this man and his offspring.

But the man, remembering that his meadow had been wilderness and that he had turned it into a thing of beauty and wealth only by his own toil, said no.

But it came to pass that many of his offspring became vaunted up with pride, became bloated with a sense of power and destiny. They knew not the toil of creation and grew impatient with the limitations of the meadow. Many became enamored of the clamoring neighbors, and many sought to gain dominion over the wastelands beyond the meadow.

And, lo, the fences around the meadow were cut here and there, and the herds of the near neighbors waxed fat on the meadow. And the sons said "This is good. Let us cut all the fences so that all our neighbors can graze their herds."

And they cut all the fences, and herds from far and near came and grew fat. And the sons who were enamored of the neighbors were proud, and those who sought dominion over the neighbors were filled with glee. And there were feasts and merriment.

But as the father had warned, the vast herds ate up the grass and trampled down the roots, and at last the beautiful meadow was again a wasteland. And the neighbors departed in anger, calling down wrath on the sons for deluding and deceiving them and upon the father for permitting the sons to act so unwisely.

And there came word of a great meadow far to the east.

• • • •

This month the second round of negotiations for tariff cuts is scheduled to start in Geneva, Switzerland. As last year, the main intention is to pull the tariff fences down so that Japan "can graze its herds" in the rich U. S. textile market.

The first round of slashing last year brought such an avalanche of imports that Japan herself drew back in fear. But the U. S. State Dept. nevertheless says, "This is good. Let us cut all the fences."

The one safeguard in the American system of government for such capers as the State Dept. pulls is Congress. Since this is an election year when a president and many congressmen must be elected, textile men should make every effort to let their influence be felt in politics. These are no times to leave matters in the hands of the sons "enamored of the neighbors" and those who "seek dominion over the wastelands."

J. H. Thomas

In 1949, 69% of the full-fashioned knitting machines in the U.S. were over 10 years old . . . in 1954, only 36% were over 10 years old.

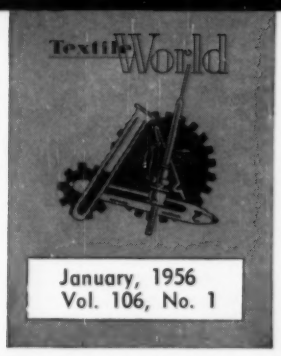
Textile Machine Works 1950 and 1954 Statistical Surveys

In the hosiery industry, the one unyielding force is obsolescence. Compare the production of your least efficient machinery with a "Reading 100" Full-Fashioned Knitting Machine—in courses per minute, dozens per hour, salability of fabric. With every Reading Machine you get the benefit of Textile Machine Works' engineering help, service and technical experience. Write us.

TEXTILE MACHINE WORKS, READING, PENNA.

The "READING 100"
Full Fashioned Knitting Machine

30 Sections 51, 60, 66, 75 Gauge



THE LAFAYETTE STORY—
A Community Saves a Mill

- In 1954, after 50 years of steady operation, LaFayette Cotton Mills Co., LaFayette, Ga., closed its doors. But 130 local citizens pitched in to help reorganize the company—and 13 months later the mill reopened.
- The story of how the people of LaFayette saved a mill and how the workers reacted is a lesson in community cooperation.

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

OVER 250 PERSONS reported for work as usual one morning in July, 1954, at the LaFayette Cotton Mills Co., LaFayette, Ga. Before the day was over, they lost their jobs. The mill shut down; and over 25% of the LaFayette textile-labor force was out of work.

"A poor market and poor production efficiency are responsible," said Earl Nanzetta, the local manager. Unbiased observers reported that harassment by the labor union also contributed. LaFayette was one of the two union-organized mills in the community.

The surprised employees at first could not imagine what had happened. The mill was an institution; it had been a going concern for 50 years. Many operators had worked for the company 20 years or longer.

Most of the older employees believed that the mill would reopen in a short while. There had been curtailments before, but always the mill had reopened.

Workers All Suffered

Some of the younger operators, more skeptical, lost no time in looking for employment in other mills and in other industries. However, many workers were too old or too ill to find new jobs. The unfortunate ones had to depend on family and friends for financial assistance.

Eventually, some of the workers found work in other textile mills in nearby towns. Others took jobs outside the textile industry. They all suffered in varying degrees.

At the time of its closing, the mill was owned and operated by Lawrence Fabrics Corp., New York, N. Y. This firm bought the mill in 1946 and spent a substantial sum of money on improvements. Looms were increased from 327 to 400; 3,000 spindles were added to bring the total to 16,320; a new cloth room was built; the opening and picking rooms were combined; a cloth conveyor was installed. Basic products were jeans and abrasive cloths.

Mill Sold at Auction

Despite an apparently sincere effort on the part of the management, the mill got into financial difficulties and eventually was sold at auction. The physical property was bought on a security deed by J. W. Valentine Co., Inc., New York, a major creditor. After the sale, the mill continued to stand idle.

The loss of the $13,000 weekly payroll soon began to pinch the merchants of LaFayette. Fred B. Henry, a civic-minded insurance and real estate salesman, began to think about the problem. He talked with numerous friends, including W. A. Enloe, Jr., whose father had operated the mill before Lawrence Fabrics Corp. bought it. Mr. Enloe was thoroughly familiar with the plant and machinery; he believed that the mill could be put back into successful operation. The next step was to find out what J. W. Valentine Co. planned to do with the properties.

How the Mill Was Reopened

A citizens' committee was formed and several meetings were held with members of the Valentine company. Valentine did not want to operate the mill; yet the property was too valuable to be liquidated. The mill probably would be sold when a suitable purchaser could be located. Valentine had bought the property primarily to salvage what it

Lafayette Mills, Inc., closed 13 months, is now a going concern with a $13,000 weekly payroll.

"We're going to keep the mill running and make the best goods you ever saw"—W. A. Enloe, Jr., vice-president and treasurer.

could of the money owed it by the defunct LaFayette Cotton Mills.

Finally, after listening several times to the pleas of the committee, Valentine offered to form a new operating company, primarily composed of LaFayette citizens, and sell 34% of the stock to local interests for $100,000. It was up to the people of LaFayette to raise the money.

A new corporation, LaFayette Mills, Inc., was created. Officers elected were Darrell E. Knox, president; W. A. Enloe, Jr., vice president and treasurer; George P. Shaw, secretary; and T. C. Giles, superintendent.

How They Raised $100,000

The next problem was to raise the $100,000. Fred Henry, although in no way connected with the new company, offered to sell the stock at no personal gain. The going was tough at first. No one wanted to buy stock that offered no promise of an immediate return on the investment.

Within a few months, however, Mr. Henry sold the entire issue at $10 par value per share to 130 local citizens. Purchasers were local merchants and professional men. No pressure was put on the purchasers, and no dividends were promised. After the ball started rolling, the selling got easier. A number of townspeople bought stock voluntarily, sometimes as little as one or two shares. The average sale was around $700.

Selling Stock Wasn't Easy

Mr. Henry summarized his selling operation as follows:

"It was ridiculous for a town of this size to give up a $13,000 payroll without making a fight to get it back. Half the towns in the South are doing all sorts of things to attract new industries–building new plants, offering long-term leases, and the like. Well, here we had a perfectly good building and equipment and a chance to own a substantial interest in the business–all for $100,000!

"What could I do but pitch in and help? I'm a salesman. I love this town and its people. So I went to work. It wasn't too easy at first.

"However, I finally convinced the people that they were buying a payroll on faith and helping to restore an institution to its rightful place. And 130 citizens came through. We raised the money, and the mill reopened on Aug. 18, 1955, 13 months after the old firm closed."

When it was decided to reopen the mill, there was a question as to whether or not a trained labor force could be raised. The mill did not have funds to establish an expensive or lengthy training course. This question was soon answered.

"They Came Running Back"

"The old employees came running back as soon as they heard the mill was reopening," said Superintendent Giles. "In fact, we had 805 applications for 225 jobs before we knew it. I believe we might have had 1,500 applicants if we had not stopped accepting them after 805. People came to see us from as far away as Atlanta, over 100 miles.

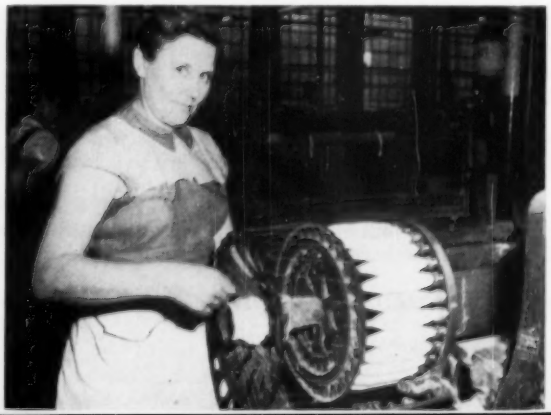
"Naturally, we gave priority to former employees; and at least 75% of our present 225 operators worked here before the mill closed. Most of those who failed to return had found other employment that they preferred to keep."

How the Workers Take It

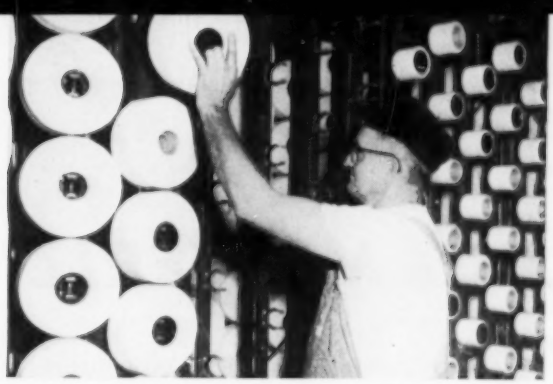
Reactions of employees who returned to their old jobs form a definite pattern. They were all glad to be back, and they unanimously believe that this time their jobs are permanent. They seem to recognize the problems of the new management and express a strong desire to help in every way possible. There is no bitterness toward the

"I thought I'd never get another job. My age must have been against me"—Minnie L. Freeman, spinner.

"I'm happy to be back, and we're all going to help make a go of it" —Lillian E. Cleghorn, batteryhand.



"What could I do but pitch in and help? I'm a salesman"—Fred B. Henry, representative, Franklin Life Ins. Co.



"I had no trouble getting a job in Dalton, but I never did like that trip"—Bennett Snyder, spooler fixer.

old management. "It was just one of those things," most of them say.

"I Got a Job in Dalton—"

Bennett Snyder, aged 53, spooler fixer, started to work in the mill in 1929. He said:

"When the mill closed, I thought it would reopen before long. But by December my unemployment insurance had run out, and I needed another job. I had no trouble getting a job in Dalton, about 28 miles away, and made out pretty good.

"My pay was just a little less than I made here, but my wife got a job as a spinner in the same mill and we got along all right. Three or four of us rode back and forth in my car, and that cut down on my travel expenses. I never did like that trip, though, and was mighty happy when this mill reopened and hired me back."

"I Lived on My Savings—"

The story was different with Mrs. Minnie L. Freeman, 52, a spinner at LaFayette for 20 years. She said:

"When the mill closed down, I thought I'd never get another job. I worked one night in a waste plant at Somerville, but the lint gave me asthma and I couldn't stand it. I never could get another job. My age must have been against me. I was unemployed for the full 13 months.

"After the unemployment insurance ran out, I lived on my savings. The only family I have is a 74-year old mother who is dependent on me. If the mill hadn't reopened, I guess I would have lost my house that I am paying on. I want to thank Billy Enloe and the others who made it possible to reopen the mill."

"I Lost Two Jobs—"

A younger woman, Mrs. Lillian E. Cleghorn, 39, battervhand, had worked in the mill for over 10 years. She said:

"I waited six weeks for the mill to reopen before I started looking for another job. When I finally got a job, I worked about five months, first in Chickamauga and then in Dalton. The Dalton plant closed down its weave shop, and again I was out of work.

"It was pretty hard on me this time, as I am a widow and have a boy in high school. I wasn't able to find another job before LaFayette reopened. It would have been worse, but I own my own home and my brother helped me out. Also, I have a little garden. I'm happy to be back."

"I Repaired Radios—"

Winfred Marshall, drawing-frame tender, had worked at LaFayette for 13 years. He said:

"I didn't believe the mill would stay closed. There was too much good machinery in it. Why, these drawing frames will run 200 ft. per min. if we want them to go that fast.

"When it looked like the mill wasn't going to reopen, I tried to find another textile job. It was kind of slow; so I went into business for myself repairing radios and television sets. I got by, but I was sure glad to get back on my old job. I own my own home and one acre of land; I have a wife and child to support."

"I Never Missed a Day—"

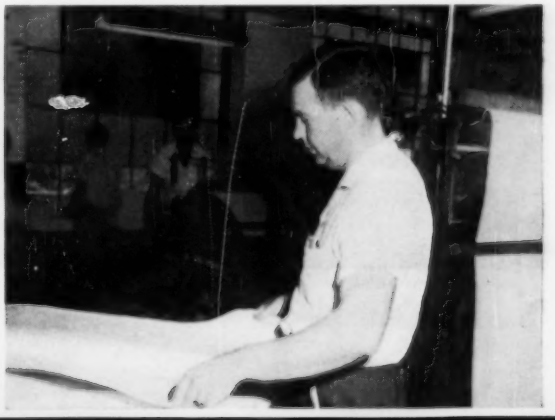
LeRoy Pilgrim, cloth-room grader, had worked in the mill for 10 years. He said:

"I thought the mill would reopen, but I couldn't wait to find out; the day after it closed, I went to work in a service station. I never did apply for unemployment payments and never missed a day's work while the mill was closed. After a while, I left the service station and started selling insurance; I did real well, too.

"However, when I heard the mill was starting up again, I came right back. I like this work better than anything I've ever done. It gives me a feeling of security."

"I didn't believe the mill would stay closed; there was too much good machinery"—Winfred Marshall, drawing-frame tender.

"I went to work in a service station and later sold insurance"—LeRoy Pilgrim, cloth grader.



Make MERCERIZING Pay

Mercerizing at caustic concentrations as low as 35° Tw. will more than pay for itself in added color yields if your mercerizing system is efficient. Here's how Pontiac Finishing Div. of Fruit of the Loom, Inc., goes about it to get—

- **Low material and labor costs**
- **High production**

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

MERCERIZING AT PONTIAC DIV. OF FRUIT OF THE LOOM, INC., Pontiac, R. I., is done with two things in mind: to produce an improved fabric and to do it at the lowest possible cost.

For a full mercerized finish, the cloth is put through caustic of 50° Tw. When increased color value of the dyes is the main object, a half-mercerized effect is obtained with 35° Tw. caustic. In either case, the mercerizing operation is carried out efficiently as regards labor and materials. Although the mercerizer and washers extend over 150 ft. and the dry cans are on another floor, only three operators are required to operate the system.

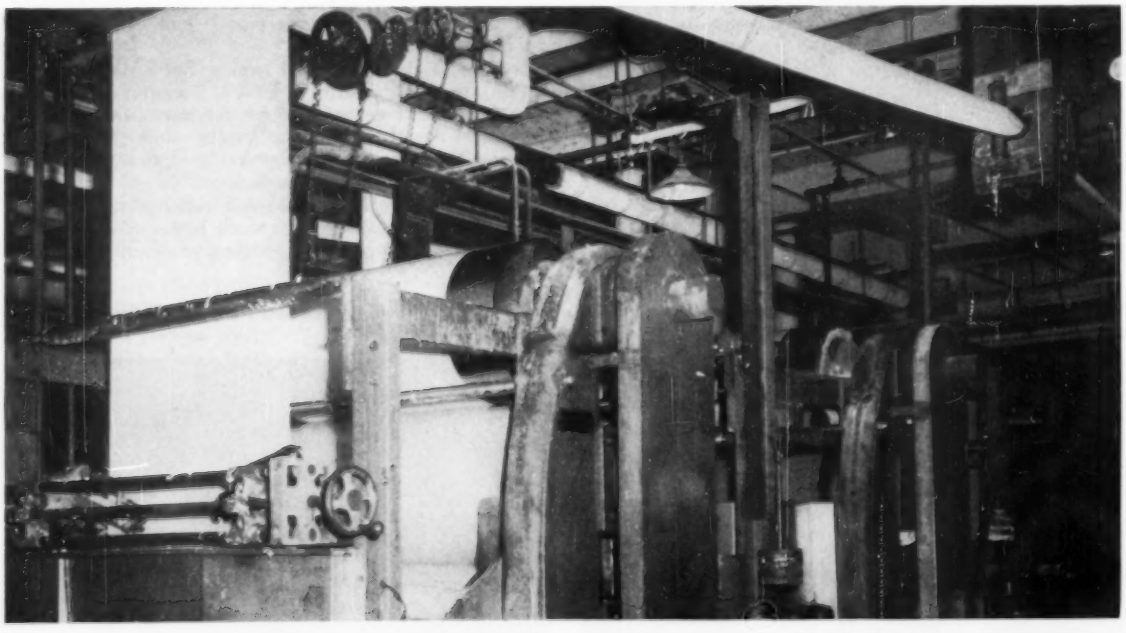
Wet Mercerizing Preferred

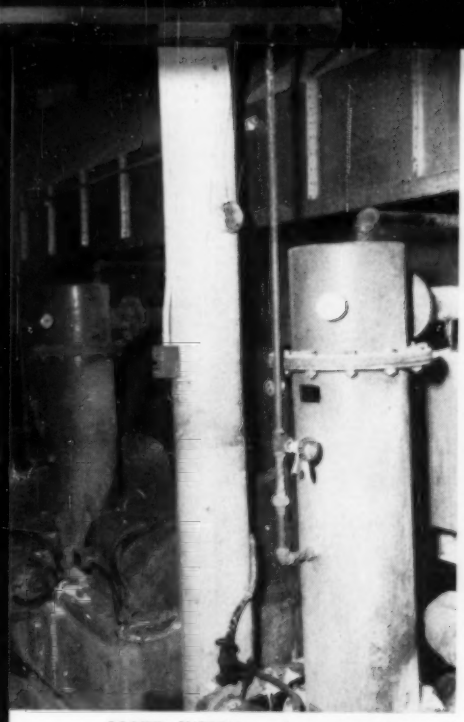
Most of Pontiac's production slated for mercerizing comes directly from the white bins. At this point the goods have been bleached in a continuous peroxide range and reeled into the bins awaiting drying or mercerizing.

Goods to be mercerized are pulled through a scutcher into a heavy two-roll water mangle that evens out the moisture content and extracts excess water. Connected in range are the mercerizing pad, tenter, washers, and dry cans. Automatic control of caustic concentration permits setting the bath for any desired strength of caustic.

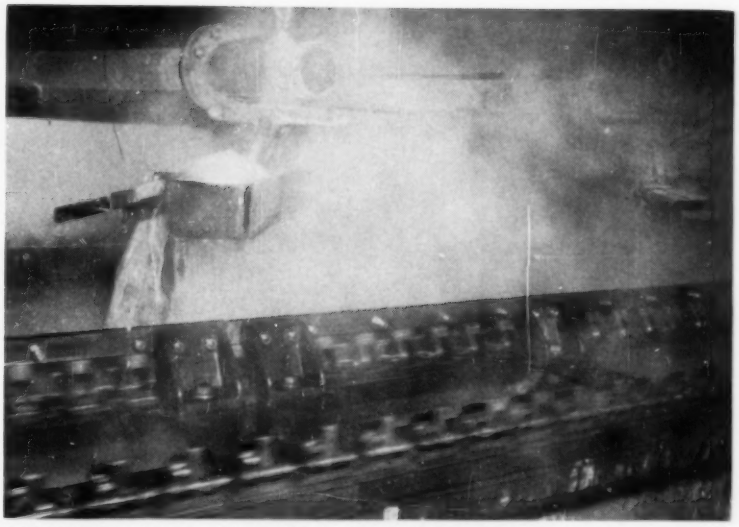
About wet mercerizing, E. L. Clifford, plant manager, says: "We think a damp piece of cloth will soak up its share of caustic more readily than a bone-dry piece. If you take a dry

HEAVY WATER MANGLE is the secret of uniform mercerizing. Goods from the white bins are opened by a scutcher and put through the mangle prior to entering the caustic pad.

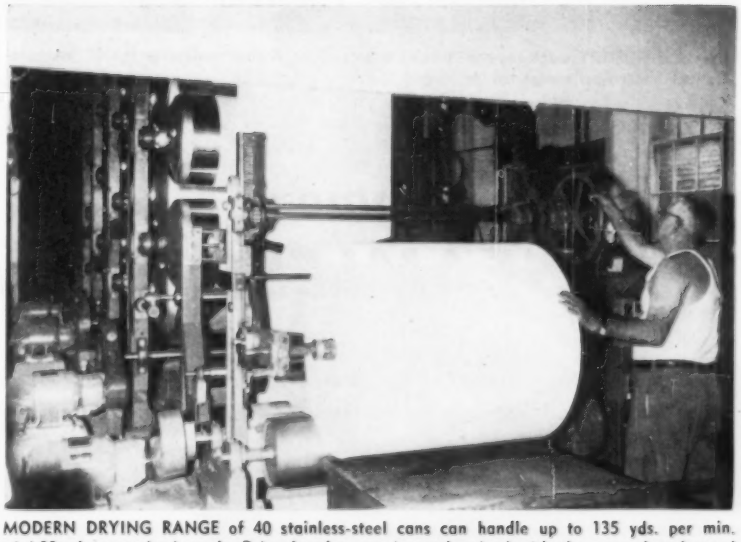




SCOTT SYSTEM washers pump hot wash water onto goods as they pass through the mercerizer. The pump inlets are connected to perforated plates mounted so as to contact the underside of the cloth. Wash water is sucked through the plates and reheated in the tall heat exchangers.



HOT WATER, and plenty of it, combined with the Scott system makes caustic removal efficient. Washing is completed in an eight-compartment open washer.



MODERN DRYING RANGE of 40 stainless-steel cans can handle up to 135 yds. per min. of 4.00 yd. mercerized goods. Drive for the cans is synchronized with the mercerizer located on the floor below.

sponge and place it in water, it will take some time to wet it out. But a damp sponge will soak up water immediately under the same conditions. So we mercerize wet."

Washing Is Efficient

The mercerizer range is equipped with six Scott washing weirs. In this system, hot wash water at 180° F. is continuously sprayed under pressure over the cloth and sucked through it by perforated plates placed under and just touching the cloth. Pumps on each unit provide pressure for the sprays. The suction applied to the perforated plates is supplied by the inlet of the pumps. Wash water is thus forced through the fabric for greater effect. The entire system of six weirs is interconnected to give a countercurrent effect.

An eight-compartment Butterworth washer is used to remove the last traces of caustic. Overflow from the first four boxes supplies wash water for the Scott system on the tenter. The rate of flow is adjusted so that the caustic content of the wash water bled off to storage is 8 to 9%. This weak caustic is used for desizing, scouring, and other purposes in the plant.

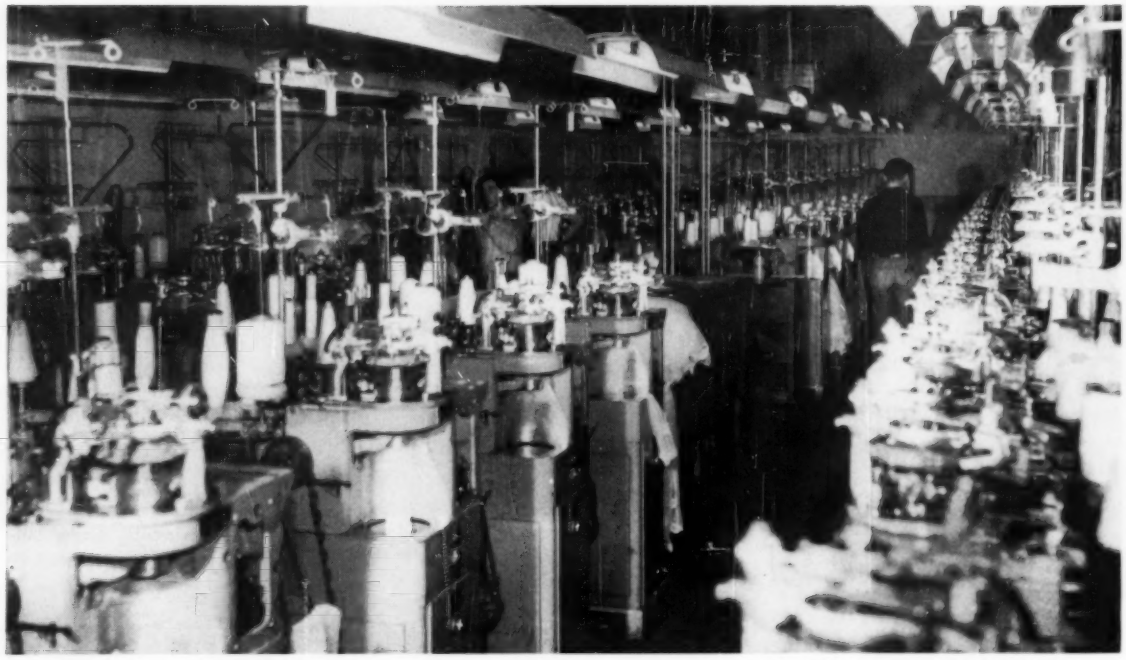
In the next to last compartment of the washer, SO_2 is bubbled into the water to neutralize the last traces of caustic. At this point, caustic content is generally under 0.2%; so there is little loss in caustic and a low neutralizing cost.

A final hot fresh water wash and a thorough squeeze complete the mercerizing. The goods continue directly from the last wash box to a stack of 40 chain-driven stainless-steel cans that can dry a 4.00 yard fabric at 135 yds. per min.

Turbines Provide Heat

Pontiac generates a considerable amount of its power requirements by means of turbine-driven generators. Exhaust steam from the turbines provides an ample supply of low-pressure steam for the drying cans. Condensate is returned to the boiler house to be used in boiler-feed water supply. Except for the unavoidable heat losses that must be expected in piping steam and hot water, Pontiac extracts every possible Btu. from the steam.

Cloth-doffing at the end of the mercerizer-dryer range has to be continuous for processing reasons as well as economy. An improved Simpson batcher takes care of this job easily. Once started, the range rarely stops except for emergencies, such as a break-out.



SEAMLESS HOSIERY machines are laid out in sets of 60. A fixer maintains the 60 machines, and two helpers keep the machines supplied with yarn and collect completed stockings.

Modern Equipment Means Better SEAMLESS HOSIERY

• Keeping abreast of the times, this women's-hosiery mill is equipping a new addition, built expressly for seamless hosiery, with the latest equipment

By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

TO KNIT TOP-QUALITY SEAMLESS HOSIERY with high efficiency, controlled temperature and humidity are essential. When Rittenhouse Hosiery Mills, Inc., Boyertown, Pa., went into the production of seamless hosiery, a new addition was built on the mill close to the existing power plant to take full advantage of the heating and air-conditioning units and keep them centralized.

The temperature is constantly controlled with automatic recorders to 78° F. while the relative humidity is maintained at 50%. These conditions help control hosiery lengths and quality and provide pleasant working conditions. When the cement floor was poured, a special compound was added to the cement to provide greater comfort for workers.

The 400-needle machines, built by Fidelity Machine Co., Inc., are all driven from independent ¼-hp. motors. The individual drives have eliminated line shafts and belts to allow workers easy access to the machines.

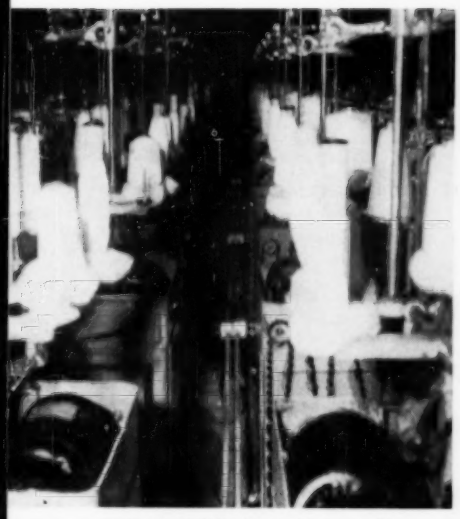
Instead of line shafts, a double 220-v. conduit runs between the machines with outlets at regular intervals. Each machine rests on a wooden stand. When a machine needs a major repair job, a dolly is pushed under the stand and the machine is whisked away to the repair section while a spare machine is put in its place.

The knitting-machine aisles are 38 ins. wide to allow easy removal of machines and for workers to rapidly check on their machines. A red light blinks when a machine stops, and helpers are taught to glance occasionally down the aisle to keep production to a maximum.

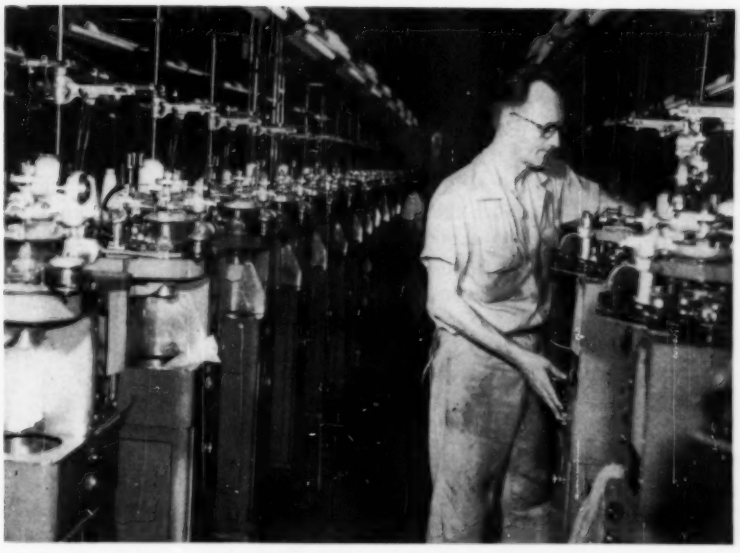
A double row of fluorescent lamps are suspended over each pair of machines low enough to give maximum light at the needles and yet high enough to allow the machines to be easily removed from the line.

Machine Speeds Are Electronically Controlled

Each machine has an electronically controlled speed arrangement. Cams on the pattern drum move a rheostat to change the speed of the machine. During yarn changes,



DOUBLE CONDUIT behind machines replaces drive shaft and pulleys. The machines are arranged to allow plenty of space for operation and maintenance.



BLOCKS under each machine allow a machine to be rapidly taken out of the line for repair. Another machine is slipped into place to retain full production.

transfers, and the make-up, the machine runs at a very slow speed but speeds up to about 185 rpm. during welt, leg, and foot knitting.

A stop motion for faulty needles is electrically controlled. A plate, which rides close to the needles, touches faulty needles to instantly stop the machine. This plate also helps to pull down the welt at the start of the stocking, but it is pulled out during the heel and toe knitting.

The control chain is located on the left side of the machine, and fixers can easily check the position of the stocking. Small pins on this chain are quickly slipped into position to denote a size change, which is indicated on the foot of the stocking in the form of tuck stitches.

The machines are arranged in sets of 60, and each set is manned by three men, one fixer and two helpers. A quality-control man constantly patrols all the machines in the room seeking machines that are producing stockings not up to standard.

A special needle fixer works with the quality-control man to keep stockings free from streaks.

In addition to the quality checks by the helper and the quality-control man, two stockings from each machine are sent to the looping section every day. These stockings are steamed and checked for size, length, streaks, and correct looper line.

The 15-den. nylon yarn, wound on special bobbins to compensate for tension variations, is stored in the knitting room until required to condition it ready for knitting.

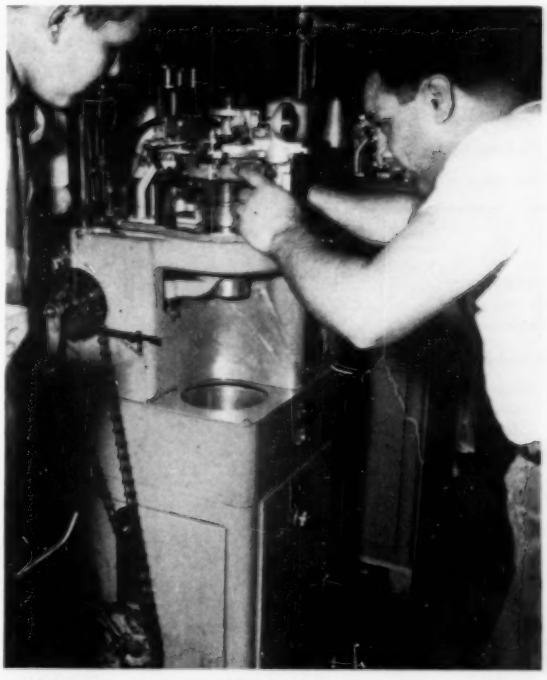
All Stockings Are Checked

Every stocking is checked for length and quality when it is taken from the machine. The stockings are drawn over a leg form on wheels, which is pushed up and down the knitting aisle by the helpers. These men wear gloves to protect the hosiery from pull threads.

Each machine knits more than 1 doz. pairs of stockings each shift; and these stockings, after a check, are laid on a bar on the machine to be collected in 1-doz. lots.

The work is collected at a receiving center in the middle of each set of machines.

The bench is covered with cloth to reduce pull threads, and the orders are assembled and checked off on production and order records by the helper. The stockings are then laid in cloth-covered trays ready for delivery to the looping section.



INSTRUCTOR teaches learner about electric stop motions. Red light on machine front indicates a stopped machine. The chain at the side of the machine can be rapidly checked for position.

Control CARDING OPERATIONS With Tabulated Data

Here's how a large cotton mill separates and coordinates its carding records to standardize production, quality, and cost. The system—

- **Avoids duplication**
- **Prevents errors**
- **Permits comparisons**

By E. H. HELLIWELL

THE PROBLEM of compiling complete machinery, operating, and cost data and keeping this information up to date has proved a source of concern to many superintendents, overseers, and cost departments. The plant manager of a cotton mill says that he avoids duplication of records, prevents many errors, and secures essential information more readily by dividing all departmental data into three general classifications:

1. **Installation data** contain all the construction and mechanical details of each type of machine. This information is obtained when the machine is installed and is considered a permanent record. Changes are seldom

Opening

Yarn to be made	20s KW
Cotton	
Staple length (ins.)	1 and 1 1/16
Grade color	Mid.
Grade leaf	SLM
Bales per mix	24
Feeder	No. 7
Feeders available	8
Feeders per feed table	4
Pin-apron speed (ft. per min.)	165
Production (lbs. per hr.)	350
Settings (ins.)	
Doffer roll to pin apron	1/2
Standard waste (%)	0.1
(Delivers stock to vertical opener)	
Vertical opener	
Openers available	2
Feeders per vertical opener	4
Production (lbs. per hr.)	1,400
Beater speed (rpm.)	650
Settings (ins.)	
Beater to grid bars	5/8
Grid-bar openings	1/2
Standard waste (%)	0.1
(Delivers stock to lattice opener)	
Lattice opener	Tandem
Lattice openers available	2
Production (lbs. per hr.)	1,400
Beater speed (rpm.)	700
Settings (ins.)	
Beater to grid bars	5/8
Grid-bar openings	1/2
Standard waste (%)	1.0
(Delivers stock via screen section, pipe conveyor, condenser, and distributor to pickers)	

Picking

Pickers	2-process
Pickers available	8
Sections per picker	2
Breaker section	
Beater	3-blade
Speed (rpm.)	1,200
Blows per min.	3,600
Feed-roll dia. (ins.)	2 1/2
Feed-roll speed (rpm.)	14.5
Ins. fed per min.	113.9
Beats per in.	31.6
Fan speed (rpm.)	1,170
Settings (ins.)	
Beater to feed roll	3/16
Top grid bars	3/8
Bottom grid bars	3/4
Finisher section	
Beater	Kirschner
Speed	900
Blows per min.	2,700
Feed-roll dia. (ins.)	3
Feed-roll speed (rpm.)	12
Ins. fed per min.	113
Beats per in.	24
Fan speed (rpm.)	1,200
Settings (ins.)	
Beater to feed roll	3/8
Top grid bars	3/8
Bottom grid bars	3/4
Summary of two picker sections	
Standard waste (%)	2.0
Total beats per in.	55.6
Fluted 9-in. calender-roll speed (rpm.)	10
Lap length (yds.)	60
Lap weight per yd. (oz.)	13.5
Net lap weight (lbs.)	50.5
Time to produce lap (mins.)	7.6
100% production (lbs. per hr.)	400
Actual production (lbs. per hr.)	353
Operating efficiency (%)	87
Lap-weight tolerance (lbs.)	1/2
(Delivers stock to cards)	

Carding

Cards available	228
Standard speeds	
Cylinder (rpm.)	165
Lickerin (rpm.)	457
Flats (ins. per min.)	3
Doffer 22-T gear (rpm.)	10.2
Production (lbs. per hr.)	11
Efficiency (%)	90
Lap weight per yd. (oz.)	12.5
Sliver weight per yd. (grains)	52
Actual draft (6% waste)	115
Draft constant	1,525
Draft gear	14
Net weight of lap (lbs.)	50.5
Doffing time (hrs.)	4.5
Net weight of sliver in full 12-in. can (lbs.)	11
Standard waste (%)	6
Card settings (ins.)	
Feed plate to lickerin	0.010
Lickerin to cylinder	0.007
Flats to cylinder	0.010
Doffer to cylinder	0.007
Top knife to lickerin	0.022
Bottom knife to lickerin	0.017
Angle of mote knives (degrees)	15.0
Lickerin blank to shroud	0.029
Lickerin screen, front	0.017
Lickerin screen, back	3/16
Cylinder screen to cylinder, front	3/16
Cylinder screen to cylinder, middle	0.058
Cylinder screen to cylinder, back	0.029
Back plate to cylinder, top	0.029
Back plate to cylinder, bottom	0.029
Front plate to cylinder, top	0.029
Front plate to cylinder, bottom	0.034
Doffer comb to doffer	0.022
Flat comb to flats	0.015

(Delivers stock to drawing frames)

Drawing

Deliveries available (finisher)	126
Front-roll speeds (rpm.)	
Breaker (metallic rolls 1 3/8-in.-dia., 32-pitch)	343
Finisher (cork rolls 1 1/4-in.-dia.)	358
Production	
Breaker (lbs. per hr. per delivery)	19.2
Finisher (lbs. per hr. per delivery)	18.2
Finisher efficiency (%)	75
Draft	
Breaker (59 grains; 6-ends-up, 52 grains ea.)	5.29
Draft gear (breaker)	46
Finisher (66.5 grains; 6-ends-up, 59 grains ea.)	5.33
Draft gear (finisher)	42
Standard waste for two processes (%)	0.5
Net weight of full can of sliver from finisher (lbs.)	14
Knock-off gears for full cans (finisher)	20 and 82
Roll settings for 1- to 1 1/16-in. staple (ins.)	

	Breaker	Finisher
1st to 2nd roll	1 3/8	1 5/16
2nd to 3rd roll	1 1/2	1 7/16
3rd to 4th roll	1 3/4	1 5/8
Trumpet-hole gauge	0.140	0.145
Trumpet nose to calender roll (step gauge)	1 1/8	1 1/8

(Delivers stock to long-draft slubbers)

Roving

Long-draft slubbers (84 spindles)	10 x 5
Frames available	33
Total spindles	2,772
Roving used for	20s W
Hank roving	1.25
Speeds (rpm.)	
Spindle	790
Front roll (1 3/16-in.-dia.)	152
Twist multiplier	1.22
Twist per inch	1.38
Twist constant	44
Twist gear	32
Hanks (100% efficiency)	45
Hanks (actual efficiency)	41.4
Efficiency (%)	92
Production per 84-spindle frame hank (lbs.)	67.2
Actual production per 40 hrs. (lbs.)	2,782
Production per spindle hr. (lbs.)	0.83
Net weight per bobbin (lbs.)	1.72
Frames per tender	3
Draft	
Back stock (grains)	66
Draft	9.8
Draft constant	324
Draft gear	33
Roll settings (ins.)	
Front to middle roll	1 1/4
Middle to back roll	1 1/2
Drawing sliver waste (%)	1 1/2
Lay gear	26
Tension gear	45
Taper gear	17

(Settings based on 1- and 1 1/16-in. staple)

made in the original record. Any minor or major changes are noted on the original data sheet to keep the records correct. Very little of this installation detail is required for operational control or cost finding.

2. **Cost-data figures** are kept entirely separate. Current hourly piece rates are a big factor in unit costs; changes in pay rates cause changes in operating costs without any change in processing procedure. The complete separation of cost data from other essential information avoids many changes in departmental records and indicates more clearly the real cause of variation in departmental costs.

3. **Operational data** are the third classification and the most important in placing the responsibility for department production, quality, and costs. If standard speeds, settings, adjustments, cleaning methods, waste removal, and other conditions are consistently maintained, the amount, quality, and cost of production should automatically take care of themselves. This method of classification permits the overseer to concentrate on the details that really count.

Planning Is Easier

Duplicate copies of each department's installation, cost, and operational data are furnished to each departmental overseer. Data changes must be jointly approved and entered on each data sheet. When changes are made in the standard organization, the reason for these changes must be plainly stated. Thus, planning is easier.

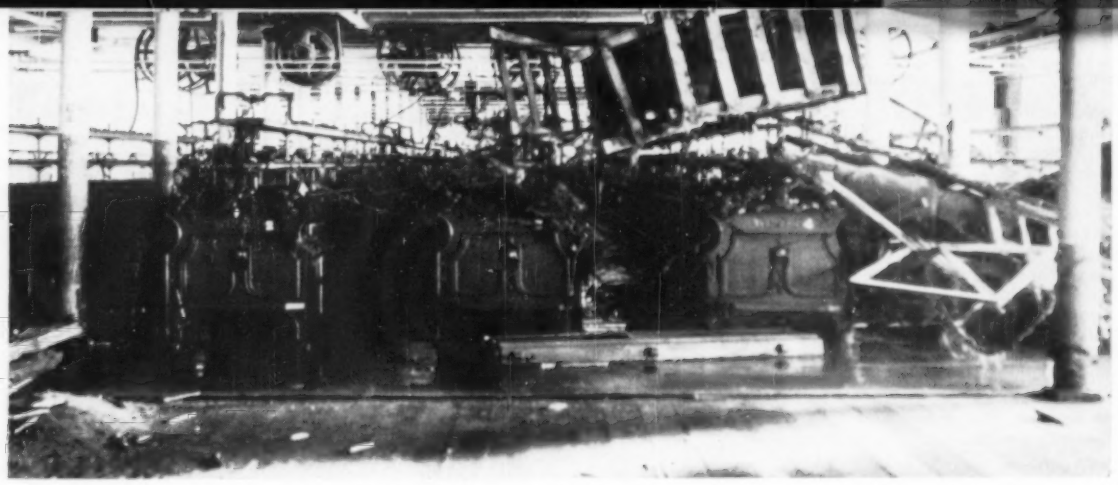
How to select and list important operational details in the carding department is shown in the accompanying tables. The same principles can be applied to other departments for similar use.

CONTINUED ON PAGE 198

Production Standards Balance

Process	Number of units	Production per hr. per unit (lbs.)	Total production per hr. (lbs.)
Picking	8	353	2,648
(Stoppage allowance is 1/2 hr. daily)			
Carding	228	11	2,420
(Grinding allowance is 8 cards daily)			
Drawing (finisher deliveries)	126	18.3	2,306
Roving (spindles)	2,772	0.83	2,301

(Production figures are reduced to pounds per hour to make them applicable to one-, two-, or three-shift operation.)



WHEN THE WATER WENT DOWN—the spinning room looked like this: a jumble of ruined machinery and construction.

FLOOD!

Wauregan Mills, Wauregan, Conn., suffered $1,500,000 damage when Hurricane Diane hit on Aug. 19 and swamped New England with "hurricane dump" water. Here's a quick look at how Wauregan dug out.

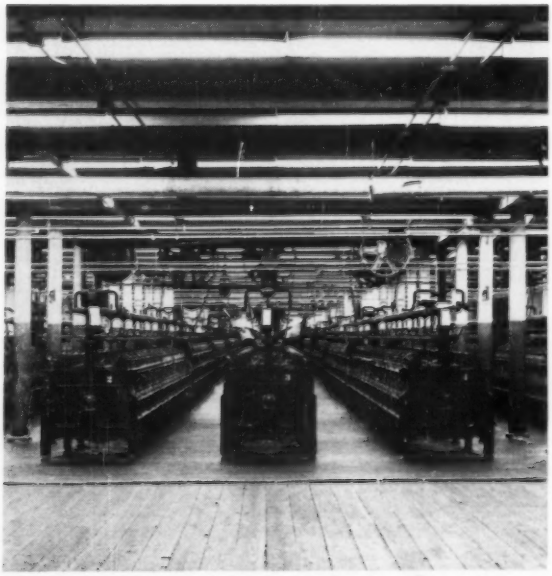
By G. J. MEEKS, Editorial Assistant, TEXTILE WORLD

THE MOST EXTENSIVE DAMAGE was in the spinning room, where the water rose to a level of 16 ft. The power plant was knocked out. The roving and sample spinning room were also badly damaged, but to date no reconstruction has been done.

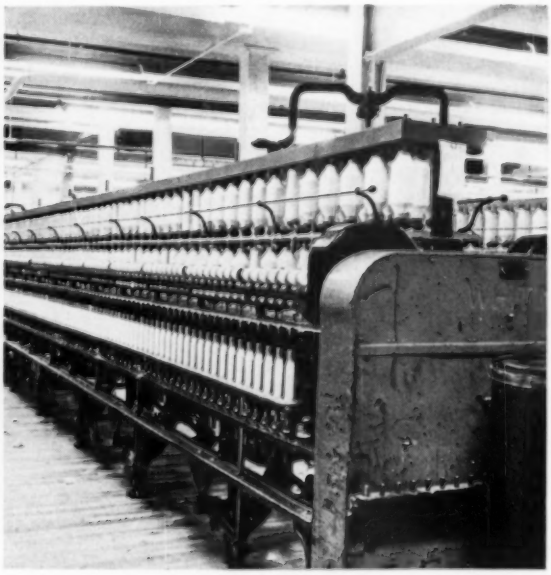
The mill was completely out of operation for three weeks. By the end of four weeks new floors had been laid, and by the end of six weeks 60 frames of new Whitin long-draft spinning had been installed.

The mill was back in complete operation by Nov. 15, without losing any orders or customers.

As a result of the hurricane, Wauregan has done extensive modernization that might not have been done; and operations not affected by the flood are being improved. For example, a general modernization is now planned for the weave room, undamaged by the flood.



BEFORE THE FLOOD—old frames and floors, overhead drives.



NOW—new spinning elements, new floors, new paint.

Report on—
NONWOVEN FABRICS

One of the fastest-growing textile products today is nonwoven fabrics. From almost nothing at the end of World War II, production climbed to an estimated 50- to 75- million pounds in 1955; and further big increases are predicted.

About 30 American manufacturers are now producing nonwoven fabrics for scores of end uses. In strength and appearance, some of the better-made nonwoven materials compare favorably with fabrics from fibers woven on looms.

In this report, TEXTILE WORLD presents the latest information on—

- **Important manufacturers of nonwoven fabrics**
- **What nonwoven materials are used for**
- **Equipment and manufacturing methods**

By RICHARD B. PRESSLEY, Associate Editor, TEXTILE WORLD

If you have thought of nonwoven fabrics as flimsy material limited to disposable napkins, wiping cloths, and similar items, you may be in for a jolt. In less than 10 years, nonwoven fabrics have jumped from an obscure beginning to a present production of about 1% of all fibers consumed in the U. S.

You have probably already seen women's crisp, full-flaring nonwoven skirts on the streets. Dresses of the same material are also appearing in women's-wear shops throughout the country, and it's a good bet that your own suit and topcoat have nonwoven interlinings.

Manufacturers of both nonwoven wearing apparel and industrial fabrics make some startling claims for their products—clothing 50% lighter than woven materials; filter cloths with six times greater air permeability than woven filters; interlinings 13% warmer than woven wool cloth in cold locations, yet cooler in hot locations; etc.

Nonwoven fabrics are a mat of fibers held together with a bonding agent. The bonding properties may be included in thermoplastic fibers themselves, or a bonding agent may be added by submerging or spraying the web of nonthermoplastic fibers.

Custom-Built Equipment

This report from several mills producing nonwoven fabrics is a cross section of this branch of the textile industry. Every mill has its own methods and arrangement of machinery, much of which is homemade or custom-built. But machinery can now be bought to set up a complete continuous manufacturing range. Some of the machinery for producing nonwovens is pretty expensive; but since several processes are cut out that would be used in spinning yarn and weaving cloth, nonwovens can generally be manufactured cheaper than woven cloth.

NONWOVEN PRINTED SKIRT is one of the women's-wear uses of Pellon's fabric called Lilion. It is lightweight and washable and requires no ironing.

What Mills Are Doing With Nonwoven Fabrics

After lying dormant for centuries, nonwoven fabrics have recently surged to the front as an important textile material. Nonwoven, man's oldest fabric, was first made from fibers of tree bark; and even now fibers from the bark of redwood trees are being used in modern machinery to make such fabrics.

Most American producers of nonwoven fabrics started their experiments about the end of World War II. Now there are about 30 large and small manufacturers, most of them located in the Eastern and Southern textile areas, but some as far west as the Great Lakes area.

Production of nonwoven fabrics was 25-million pounds in 1953, last year for which definite figures are available. Production in 1955 was estimated at between 50- and 75-million pounds, and men we rely on say production will double every three years until the mid-60s.

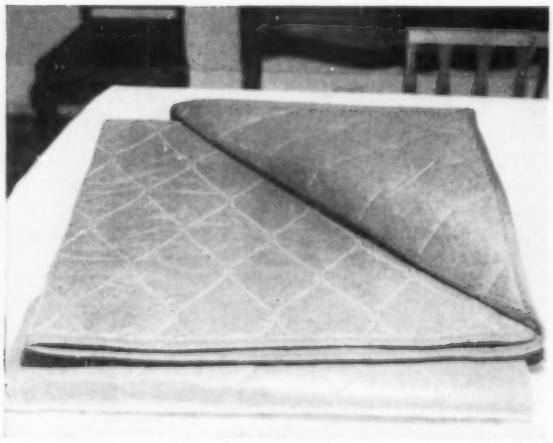
All Fibers Are Used

At present, nonwoven materials are being manufactured from all natural and many synthetic fibers. Fibers used include wool, cotton, asbestos, Fiberglas, nylon, rayon, Dacron, Dynel, and many others.

Many bonding agents are used, in addition to thermoplastic fibers that need no bonding agent. At Star Woolen Co., for example, buna N rubber, vinyls, and polyvinyls are used.

Possibly the oldest American producer to manufacture nonwovens without natural fibers is American Felt Co. Its production on thermoplastic fibers goes back to 1932. At American Felt, production on nonwoven fabrics from synthetic fibers is usually limited to industrial applications where the synthetic fibers do a better job. For example, filters are made for liquid foods, wines, etc. Nylon, Dacron, and Dynel are preferred for this application.

American Felt Co. uses every known fiber from mink to sisal, but wool is its principal fiber. It uses 12 types of cotton, 96 types of wool, and every synthetic fiber. The bonded fabrics vary in thickness from 0.025 in. to 3 ins.



EMERGENCY COMFORTER, made by Star Woolen Co., is a blend of wool and synthetic fibers. The outer surface is polyethylene. The price is under $3 for large lots.

ACETATE NET RIBBON decorated and reinforced with stripes of viscose yarn is made by Minnesota Mining & Mfg. Co. The acetate fiber is the bonding agent.

INTERLININGS by Pellon are packaged in bolts ready for store shelves. A large percentage of interlinings goes to home seamstresses. Random distribution of fibers is necessary in these fabrics.

and in weight from 3 oz. per sq. yd. to 75 lbs. per sq. yd. Prices range from $0.26 per sq. yd. to $450 per sq. yd.

J. F. Marshall, vice president of American Felt Co., says, "The possibilities of nonwoven fabrics made from both natural and synthetic fibers are unlimited."

Pellon Brings Glamor

Pellon Corp. has done much to glamorize nonwoven fabrics. Pellon makes nonwoven fabrics ranging in quality from domestic dishcloths to petticoats for European queens. Its newest fabric, Lilion, is for dresses and skirts.

An interlining fabric is Pellon Corp.'s most important nonwoven product. This fabric is a bonded thermoplastic made from 75% nylon and 25% rayon and cotton.

David Morgenstern, Pellon's president, says, "Our products are sold in 22,000 stores in the United States. Widths run up to 80 ins., but 25-in. widths in several colors are sold for home sewing."

Star Woolen is a large producer of nonwoven fabrics under the tradename Texstar. Interlining material in both black and white is one of its important products. Morris L. Hirsh, vice president, makes this comment on Star's interlining: "We are using 100% nylon fibers in our fabric to get rapid drying, resilience, strength, and durability."

In addition to towels, napkins, disposable draperies, and backing for vinyl sheets, Chicopee Mills, Inc., is making an interlining called Masslinn.

Howard L. Leventhal, superintendent, The Visking Corp., says, "We manufacture nonwoven fabrics ranging from cellulosic to synthetics. We use cotton, nylon, acetate, Vinyon, Dacron, and Orlon in staple fibers and binders. Our end uses range from casket linings to artificial flowers and from bowling-alley wipers to resilient interlining fabrics."

Minnesota Mining & Mfg. Co. makes three types of nonwoven ribbons in many colors, and some patterns are also printed in polka dots and shadow stripes.

Another nonwoven producer, Avondale Mills, is sticking pretty close to cotton and staple rayon in making its Plastavon. A plastic bonding agent is used. Fabrics made include ribbons, tapes, surgical masks, napkins, and many others.

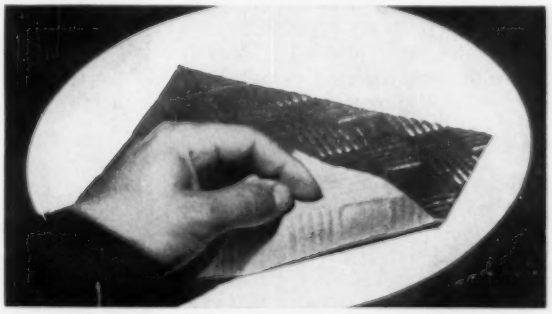
Two Bonding Methods

Asbestos nonwoven fabrics, Pyrotex, are being made from spinning grades of asbestos fibers by Raybestos-Manhattan, Inc. The webs are produced on cards. The fabrics are usually bonded with 2% starch by fabric weight. A 3 to 5% resin binder is also used.

The nonwoven asbestos fabric is laminated in sheets, rods, and tubes in much the same shapes steel is produced; and these standard shapes are punched, sawed, and milled into a wide variety of heat-resisting products, many of them used for electrical insulation.

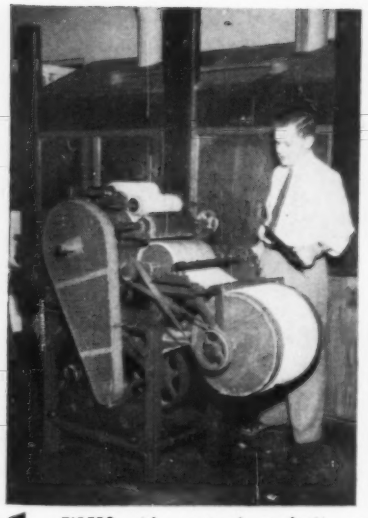
To make nonwoven fabrics, most producers are using cards or garnetts to make the web and follow one of two general processes for bonding: (1) bonding thermoplastic fibers to themselves or to other fibers by heat, and (2) bonding fibers that do not have thermoplastic properties to each other with a resin.

A third method employs lithium bromide. This method is relatively new and is still not widely used.



EMBOSSED PATTERNS are retained by using nonwoven fabrics as backings for Goodyear vinyl sheets. The fabric bonding agent is Chemigum latex. The finished material is used for automobile upholstery items.

Basic Methods for Making



1. FIBERS, either natural, synthetic, or blends, are run through a sample card.

2. BATT of carded fibers is cut into small samples, usually measuring 6x6 ins.

3. NONTHERMOPLASTIC FIBERS are placed between two sections of wire mesh.

At American Felt Co., all nonwoven fabrics are first made in a laboratory equipped with a sample card and other necessary equipment. This mill was selected for an explanation of how nonwoven fabrics are made because it is probably the oldest manufacturer of nonwoven fabrics with synthetic fibers and is also using all known fibers in the production of nonwoven fabrics. These laboratory methods are used for illustration because they simplify the basic operations and make the two methods easy to understand.

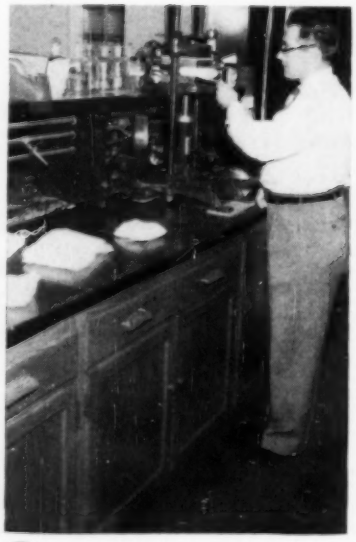
The selection of the fibers and the blending of the fibers have much to do with the finished product. These practices are especially important when thermoplastic fibers are used to bond themselves.

Bonding With an Agent

Pictures No. 1 through No. 7 show the steps necessary to make nonwoven fabrics from nonthermoplastic fibers with the addition of a bonding agent.

Fibers Bond Themselves

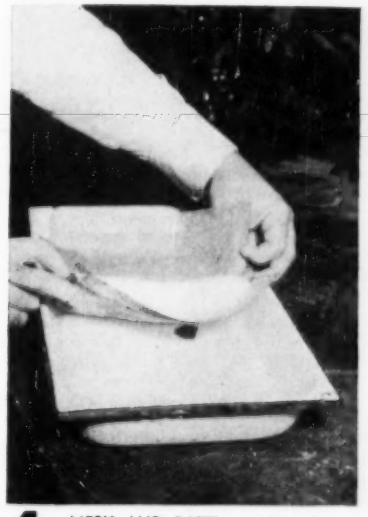
Pictures Nos. 1, 2, 3A, 4A, and 5A show the procedure for making nonwoven fabrics from thermoplastic fibers. Thomas J. Gillick, director of engineering, points out that there are two important facts to remember: (1) some fibers are both adhesive and cohesive, and (2) other fibers are cohesive only.



3a. BATT of thermoplastic fibers is then placed in a heated platen press.

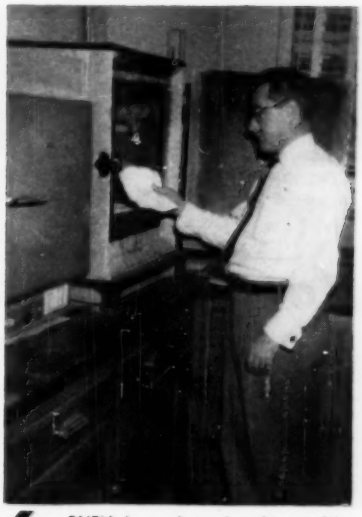
4a. BONDED FABRIC is removed from the press. Curing is the only operation.

Nonwoven Fabrics

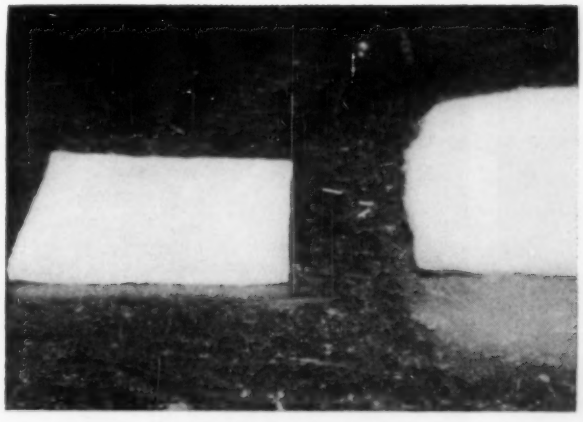


4. MESH AND BATT are dipped in a bonding solution. The binder is a synthetic resin.

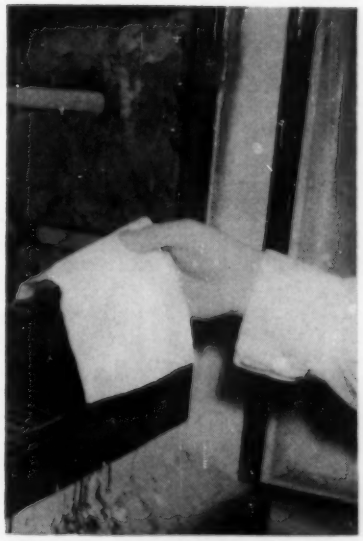
5. EXCESS BINDER is squeezed out in a hand wringer that also sets the batt thickness.



6. OVEN is used to dry the emulsion and finish making the nonwoven material.



5a. FINISHED FABRIC has draping qualities depending on the fiber properties.



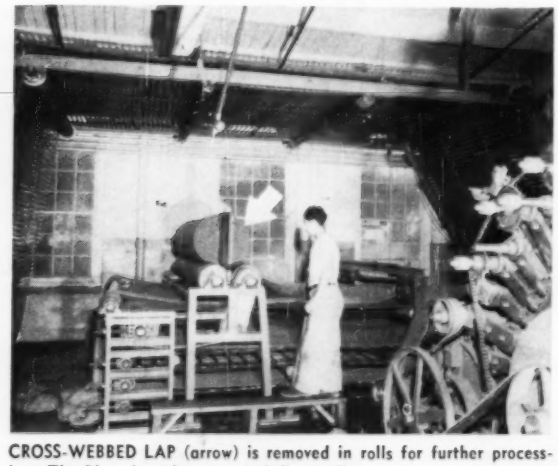
7. FINISHED FABRIC has draping qualities according to the properties of the binder.

BLENDED FIBERS that have been run through opening and picking are placed in a Bramwell automatic weighing feeder (arrow).

FIBER STOCK (arrow) drops from the automatic weighing feeder onto a belt that carries it to a 60-in. Davis & Furber breaker card.

How American Felt Co. Makes Nonwoven Fabrics

Production of nonwoven fabrics at American Felt Co. is concentrated on industrial materials. American Felt has five plants. The engineering and research laboratories are located in Glenville, Conn., at the executive offices. There is also a large production plant at Glenville.



CROSS-WEBBED LAP (arrow) is removed in rolls for further processing. The fibers have been crossed diagonally.

The company specializes in Dacron, Dynel, and nylon nonwoven fabrics for filter presses and vacuum filter mats. The following qualities are claimed for a Dynel material: tensile strength, 2,400 psi.-ga.; Mullens burst strength, 23 psi.-ga.; breaking strength, 120 lbs. per 2-in. width; elongation, 75% to rupture; fabric density, 50% specific gravity; porosity, 46% voids; temperature-operating range, −20° F. to 150° F.; and shrinkage, 0.0% at 150° F.

The fabric is also said to tolerate strong inorganic acids except nitric, medium-strength alkali solutions, most salt solutions, and most aliphatics; but it dissolves in ketones and aromatic compounds.

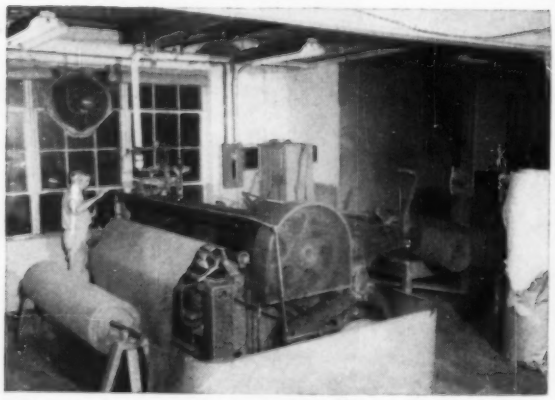
Fabrics Are Patented

The Dynel nonwoven fabric weighs 20 oz. per 72-in.-wide linear yard. The thickness is 0.025 to 0.030 in. Similar fabrics are made from nylon and Dacron. All the filter fabrics are patented by American Felt.

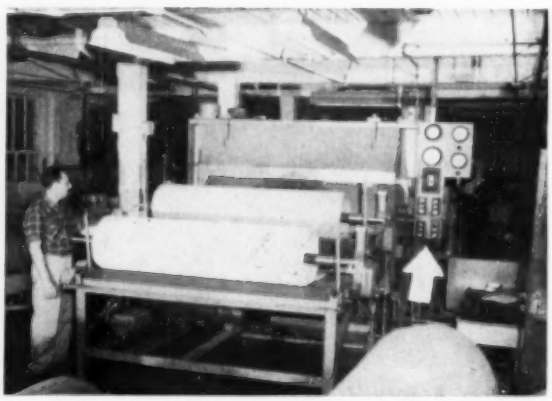
Other nonwoven fabrics range from 30 oz. per sq. yd. to 40 oz. Widths run from 72 to 80 ins. The cutters fold the 72-in.-wide fabric lengthwise in the center to 36-in. widths and cut the fabric in multiple thicknesses.

Changes are now being made in manufacturing machinery to make fabrics 84 ins. wide. The 84-in. material will be used for interlinings for coat fronts.

Each manufacturing plant operated by the company



BONDING AGENT is added to nonthermoplastic webs. David Gessner rotary press removes excess solution and sets the fabric thickness.



THERMOPLASTIC-FIBER batts are bonded in a platen press. The press is fully automatic. Temperature and time are set by controls.

AUTOMATIC FEEDER, Apperly, delivers the sliver (arrow) from the breaker card to the 100-in. finisher card for final alignment.

BATT-FORMING APRON (arrow) delivers a web from one finisher card crosswise over a web from another finisher card.

begins its operations by opening and blending the synthetic or natural fibers and feeding the blended fibers to a breaker card. Sliver from the breaker card is fed diagonally by a feeder to a finisher card, and the webs from two finisher cards are crossed with a lap-forming apron for greater strength.

Bond by Two Methods

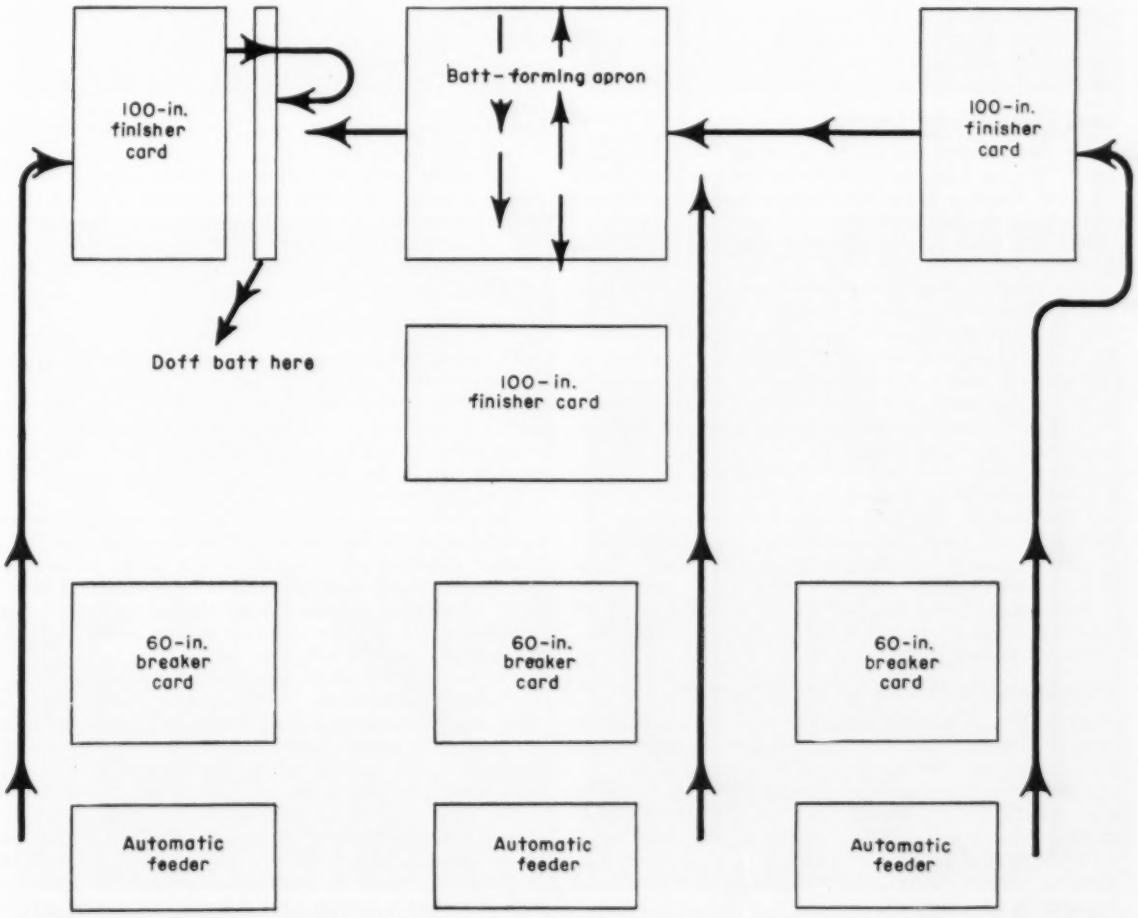
At the Glenville, Conn., plant, for example, the sliver from a 60-in. breaker card feeds a 100-in. finisher card. The web from the finisher card is 90 ins. wide. Further processing reduces the web in width to 72 or 84 ins.

Card speed and the speed of the batt-forming apron can be varied to give any desired weight of web. Therefore, it is possible to predetermine the weight and strength of a given fabric.

Fabrics are bonded by two methods:

1. A bonding agent is added to the web by submersion or spraying. Then the surplus solution is squeezed out, and the fabric is dried.

2. Thermoplastic fibers in the blended web are cured in a platen press.



BATT-FORMING PROCESS begins with blended stock in three automatic feeders. Stock goes through three breaker cards, three Apperly feeders, three finisher cards, and a batt-forming apron.

How Other Mills Make Nonwoven Fabrics

No two mills have identical equipment or methods for making nonwoven fabrics. To date, the development of equipment and methods has been made by individual mills rather than by combined efforts within the nonwoven field.

Practices at Pellon Corp.

The Pellon Corp. began producing nonwoven fabrics in 1952; but David Morganstern, president of Pellon, had been studying the possibilities of the fabric for several years. Pellon has the American nonwoven-manufacturing rights for machinery produced in Europe. Motors, drives, and other accessory equipment are American-made. Pellon also has some custom-made equipment.

The bulk of fibers used at Pellon are thermoplastic. They are prepared in webs by cards and distributed at random before they are bonded together. The thermoplastic fibers being used at present are nylon, with cotton and rayon completing the blend. Experiments are being made on Orlon, Dacron, etc. Work is also being done on a bonded all-cotton outerwear fabric.

Long-Staple Nylon Used

Mr. Morganstern has this to say about the nylon being used: "We use 3-den. nylon staple 4½ to 5 ins. long. There are over 900,000 fibers in a square yard of outerwear fabric."

Pellon is made in colors by dyeing the staple before it is processed.

The machines used to apply the bonding agent to nonthermoplastic fibers are custom-made. The bonding agents are foam-like thermosetting materials lighter than the fibers and are applied directly to the fibers. The bulk of the bonding agent is removed after the bonding process.

Steam, electricity, and gas are all used in the processes that dry and cure the fibers. Nylon fibers are held at about 400° F. during curing.

Fabrics usually made vary from 1.7 oz. per sq. yd. to 8 oz., but sometimes heavier fabrics are made. Interlining material runs from 8 mils to 65 mils in thickness. Lilion, Pellon's outerwear fabric, averages about 14 mils in thickness.

Lilion is sold in gray cloth to five converters who finish and print the fabric.

Pellon was granted two United States patents in 1955 covering its nonwoven fabric and its process for manufacturing nonwoven fabric.

Avondale Does It This Way

Production of nonwoven fabrics at Avondale Mills is entirely different from production at Pellon, both in the fabrics made and the machinery used.

Avondale is manufacturing two types of fabrics: (1) all-card-web fabrics of parallel fiber construction, and (2) random-web fabrics. The carded fabrics have high strength in the lengthwise direction and low strength crosswise. The random-distributed fabrics have a balanced strength in all directions.

Avondale's equipment, all homemade, consists of a fast continuous range that turns out fabrics bonded by plastics. The fabric has many finishes, including bonded-in colors. The machines consist of a picker, cards in tandem, an optional random-web unit, an impregnator, and an oven.

Always Make Improvements

Cash Stanley, head of the nonwoven-fabric process, points out that the equipment is constantly being improved for better fabrics and better operation.

Avondale's nonwoven fabrics, called Plastavon, are made from garnetted cotton-thread waste or staple rayon. The webs formed by the fibers are impregnated with synthetic plastics.

The rayon fabrics are made entirely from card webs, but the cotton fabrics are made either from card webs or from a sandwich web made by placing card webs on each side of a random web produced by a special random-web unit developed by Avondale. The cotton used is bleached and garnetted soft white threads; rayon is first-grade 1⅜-in., 1.5-den. bright staple.

Cotton threads are garnetted and bleached in loose form in the dyehouse. The rayon staple is stored in bale form close by the picker. A conventional picker, making a 14-oz. lap, is the first unit in the fabric process.

One of the continuous nonwoven-fabric ranges at Avondale is a straight five-cards-in-tandem range with an endless belt to collect the webs, an impregnator with pressure rolls, a dryer, and a batcher to make the cloth roll.

The cards are run at a cylinder speed of 180 rpm. and a lickerin speed of 580 rpm.

Homemade Random-Web Unit

The other line is essentially the same, except that it has the random-web unit in tandem with four cards. The random-web unit, located after the first card in the line so that a card web is underneath it on the conveyor, can be bypassed to make all-carded fabric. The carded webs on each side of the random web give a more-even appearance to the fabric.

The random-web unit is a combination of a high-speed lickerin, an air stream, and a revolving-screen take-up. The lickerin whips off the incoming fringe of the picker lap, and the air stream blows the individual fibers in all directions. The fibers are picked up on the surface of the revolving screen and are delivered to the endless belt in the form of a random web.

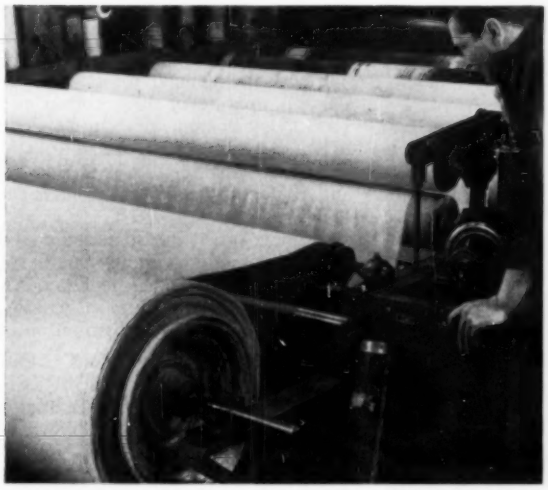
The multiple-web sheet, all-carded or random-sandwich, is impregnated with the plastic solution in the impregnator; and excess solution is squeezed out before the sheet passes into the drying oven. Roll pressure is the same at each end and is maintained by a homemade system that has a hydraulic cylinder and pressure gauges at each end.

The oven is a slasher dryer adapted to the special requirements of the direct process. The dryer has three blower systems. The moisture is driven out of the sheet in the low-temperature sections of the oven, and then a high-temperature section gives a fusing and curing action to the plastic. The web that goes into the oven comes out as a sheet of nonwoven fabric.

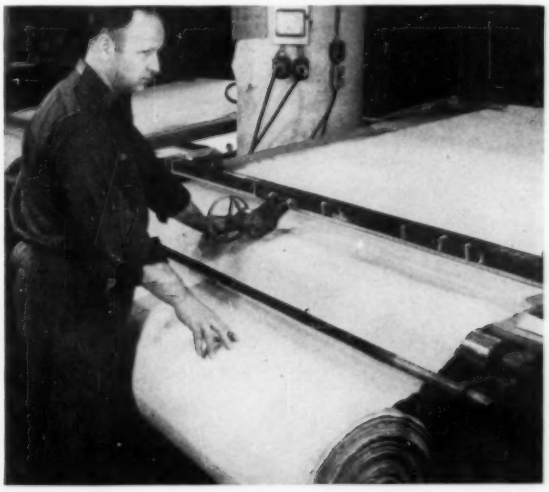
The nonwoven fabrics are given a variety of finishes: hot-calendered, cold-calendered, embossed, coated, and printed. The nonwoven-fabric unit of Avondale does all finishing except embossing and coating, which are done outside the organization. The fabrics are slit or left as bulk rolls and are packaged to order in the packaging room.

Plastavon is strong, pliant, porous, and absorbent. It does not disintegrate in water, and it withstands the effects of most common solvents. Plastavon towels, for example, can be washed in hot soapy water.

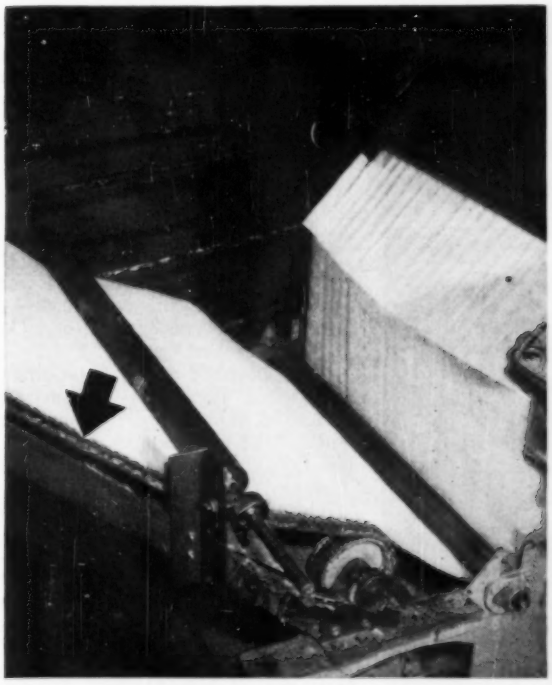
Strength of the fabrics depends on the style. A strength of 66.5 lbs. lengthwise and 53.8 lbs. crosswise was measured by a Scott tester on a 1.90-sq.-yds.-per-lb., 36-in., random-web cotton fabric. A more-standard fabric at Avondale is a 36-in., 5.16-sq-yds.-per-lb., random-web, hot-calendered cotton fabric that breaks at 15.0 and 8.9 lbs. The rayon fabrics are made of three to five carded webs and have strengths up to 25 and 7 lbs.



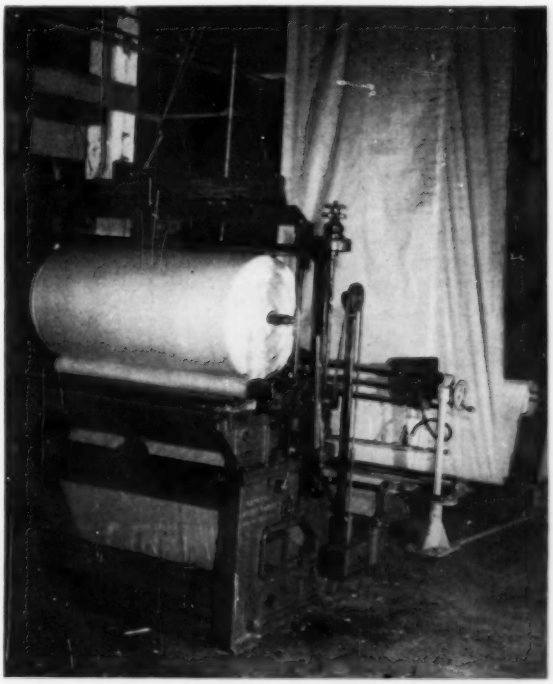
WASHING the fabric to remove bonding residue is a final process at Pellon. A spray of chemicals followed by a spray of water completes the job.



INSPECTION of the finished nonwoven fabric is the final step before packaging at Pellon. Distortion of fibers is the usual major defect.

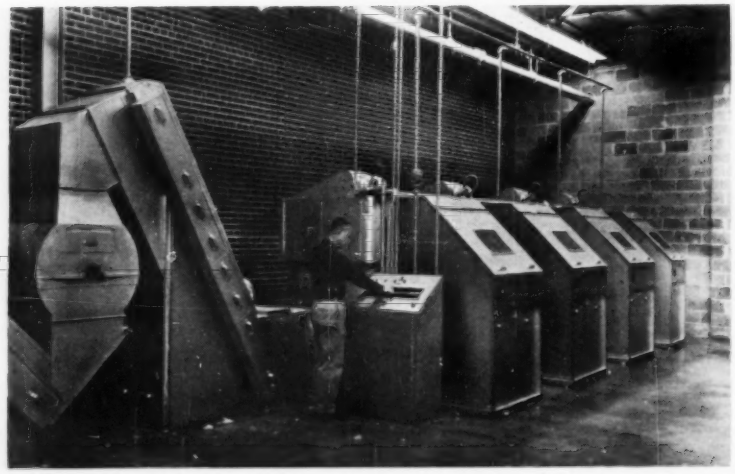


WEBS at Avondale Mills are formed from three, four, or five cards. Four cards and a random-web unit are also used. An endless belt (arrow) collects the web.

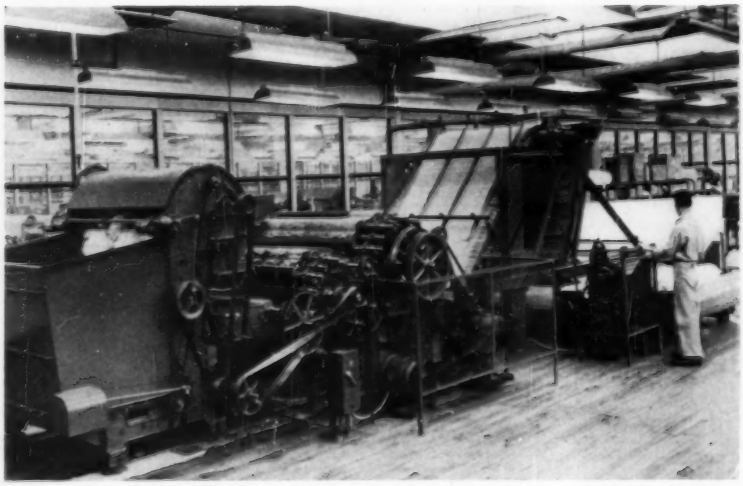


FABRIC can be slit into ribbons of any width as it is rolled up at Avondale. The rolls can also be left in a single sheet. The finishing process is next.

Equipment for Making Nonwoven Fabrics



STOCK is blended in a Dodenhoff blending system. Wool, synthetic, and cotton fibers are used separately or combined.



BLENDED AND OPENED STOCK is fed to a Proctor & Schwartz garnett machine. The average production is 175 lbs. per hr., but 200 lbs. is possible.

Although most nonwoven-fabric manufacturers had to develop their own equipment and methods up to a short time ago, it is now possible to buy equipment from several machinery manufacturers. These machines can be set up in a complete range.

Because so many different types of fibers are used together to make nonwoven fabrics, blending of fibers is one of the big problems. This problem is particularly critical on thermoplastic fibers that are to be bonded to themselves or bonded to fibers with other properties.

Fibers are blended for several reasons. A mixture of 90% cotton and 10% nylon is used, for example. The nylon is for bonding, strength, and luster. Another mixture is 90% wool and 10% cotton; the cotton fibers cut the costs.

Crimped fibers are sometimes used to add strength. Various lengths of fibers are also blended together; for instance, nylon of 2- to 5-in. lengths. Blending gives an even distribution of the fibers.

Automatic Blenders

An automatic blending system is being used to blend fibers uniformly. Up to four batches of different fibers are thrown into four hopper-feeders manually. Each batch of fibers is weighed by the machine, and the four batches are automatically dumped on a conveyor belt at the same time.

The batches of fibers are mixed together in a mixing chamber, and then the blended stock is fed or piped to a picker. This blending system is manufactured by W. D. Dodenhoff Co., Inc.

Blended and opened stock is delivered either automatically or manually to an automatic feeder for a garnett machine or wool card.

Three types of card and garnett feeders are being used: (1) Proctor & Schwartz, Inc., (2) Bramwell, made by George S. Harwood & Sons, and (3) W. D. Dodenhoff Co., Inc.

The Dodenhoff automatic-weighing garnett-feed hopper is the newest feeder and was designed for nonwoven fabrics. The manufacturer claims that laps from the garnett are held to plus or minus 1% variation.

This weighing feeder has a variable-speed lifting apron and Sargent-type comb to deliver fibers to a horizontal conveyor that feeds the garnett or card. An electric eye controls the tandem hopper feed. The garnett is fed with a variable-speed drive.

How the Web Is Made

The feeder in one mill installation works this way:

1. Blended stock is fed to the weighing feeder manually.
2. The stock is fed to a Proctor & Schwartz garnett from a horizontal belt controlled by the weighing feeder.
3. The web from the garnett goes to a Proctor & Schwartz lapper.
4. The web is continuously crossed or folded at variable speeds on the lapper.
5. The web is rolled to a lap.

All these machines are equipped with variable-speed drives to produce fabric yard weights as required.

The Proctor & Schwartz garnett machine is a high-speed machine designed to produce batting. It processes cotton, cotton waste, linters, wool waste, jute waste, rayon, and other synthetic fibers.

Fabrics for many end uses require random distribution of fibers. Curlator Corp. is manufacturing two machines to be used in tandem that form a complete web with uniform selvages ready for bonding. The machines are the Rando-Feeder and Rando-Webber. The machines process raw materials ranging from garnetted thread waste to opened nylon fibers.

The two Curlator machines used in conjunction produce webs of any desired thickness from paper-thin to 2 ins. thick. They are made in three widths to produce 40-, 60-, and 84-in. material. Production rates range up to 7½ lbs. per hr. for each inch of machine width.

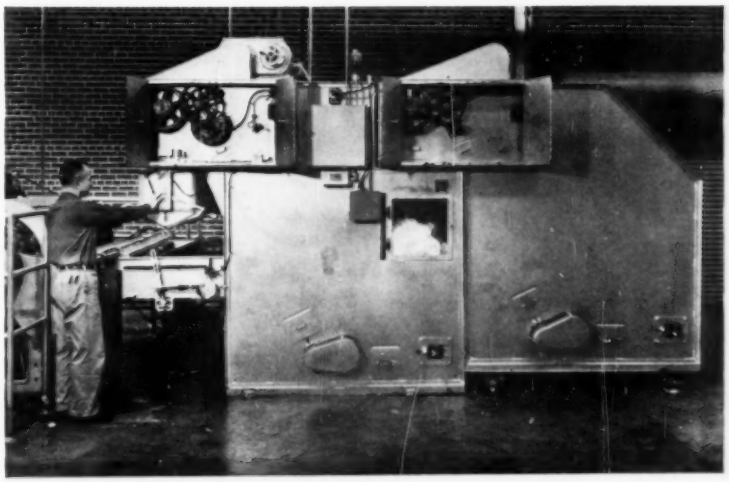
How To Bond Fabrics

One of the biggest stumbling blocks in making high-quality nonwoven fabrics, particularly in manufacturing interlinings, is the lack of control during impregnation in the bonding agent and during drying and curing. The wet mass of webs is easily distorted and stretched to nonuniform weights.

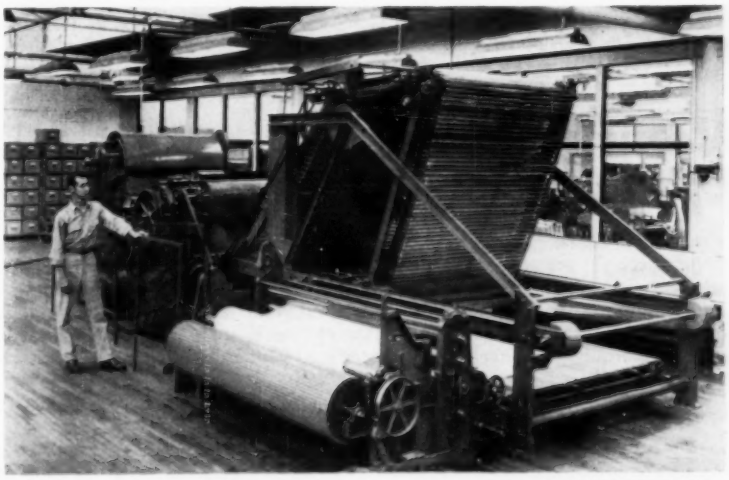
A drying and curing oven and a drying oven manufactured by J. O. Ross Engineering Corp. are the newest developments to bond nonwoven fabrics. The equipment is manufactured in both single- and double-conveyor models. The conveyor is a wire mesh.

Gas or natural gas is usually used for heat. The machine operates between 200 and 400° F. Where both drying and curing are done in one operation, the drying time is 30 secs. and curing time is 30 secs. The normal speed for drying and curing is 10 to 12 ft. of fabric per minute, but speeds up to 24 ft. per min. are sometimes used. These speeds are possible when the machine is drying or heat-setting latex and vinyls.

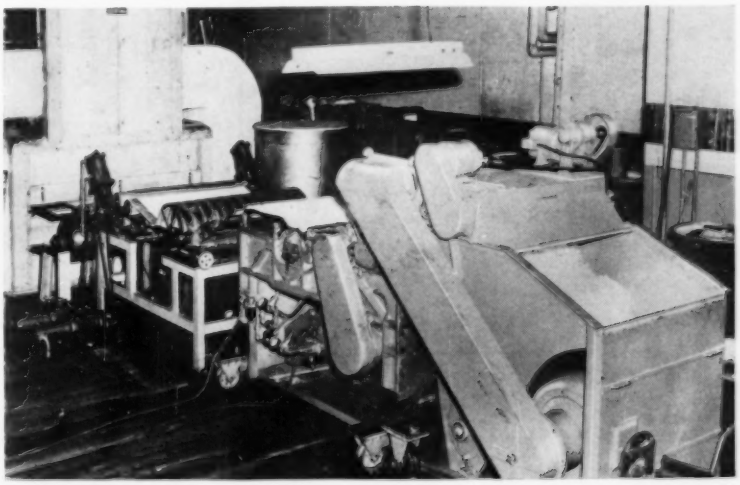
Units are manufactured for wet and dry processing.



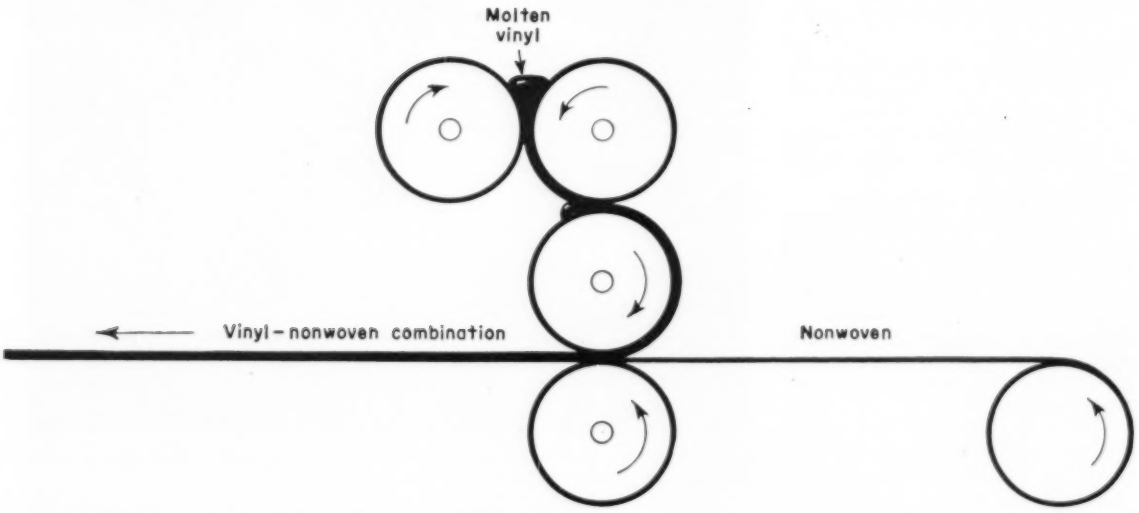
GARNETT FEED or card feed is automatic in this Dodenhoff machine. Stock may be placed in the hopper by hand or tandem feed.



LAPPER, made by Proctor & Schwartz, crosses two webs of fibers. The next operation can be bonding or further arrangement of fibers.



COMPLETE RANGE at Celanese Corp.'s nonwoven pilot plant at Burlington, N. C., consists of a Curlator Rando-Feeder, Rando-Webber, impregnator, and Ross Engineering drying oven.

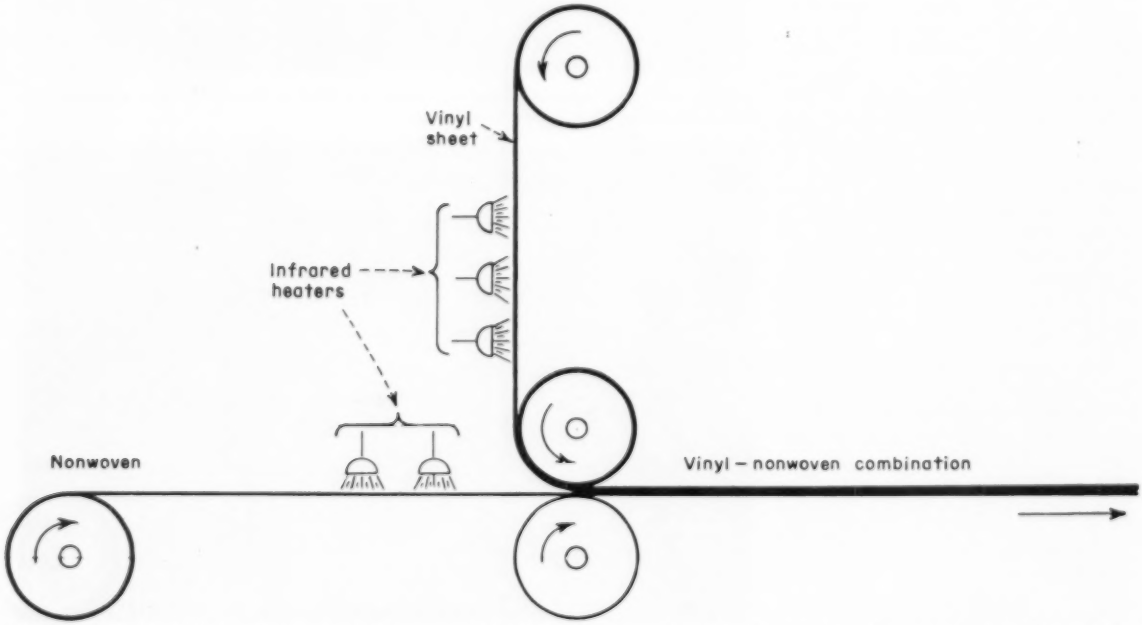


CALENDER COATING. The vinyl is heated to a molten pliable condition and forced between two heated rolls of the calender. The space between the rolls determines the final thickness of the finished material.

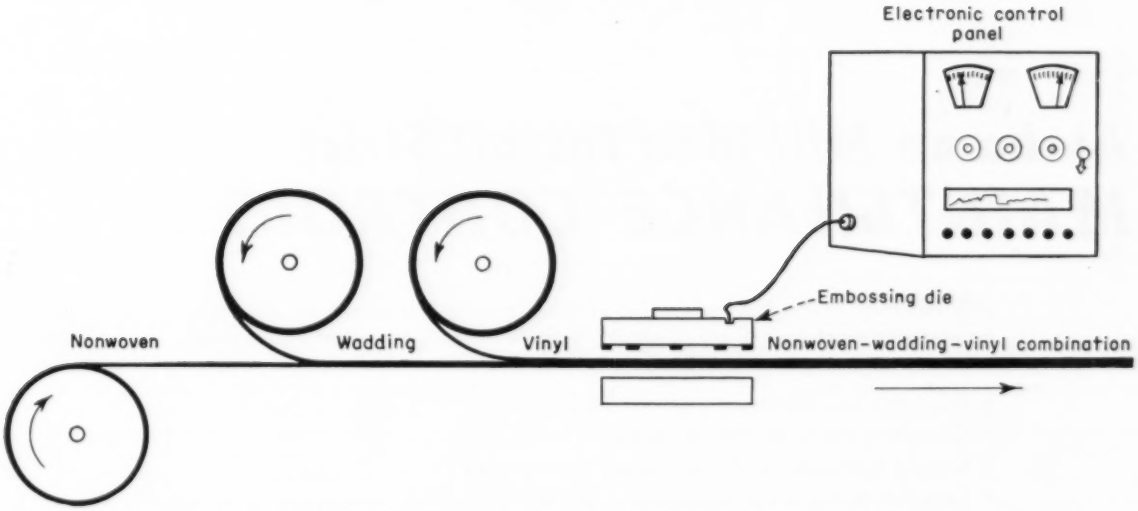
Nonwoven Fabrics Finished for End Uses

Nonwoven fabrics are sometimes processed further after they leave the manufacturing plant. For example, The Goodyear Tire & Rubber Co., Inc., points out that nonwoven fabrics are being used in great quantities in automobile-upholstery items such as door paneling, scuff pads, and seat bolsters. Several car manufacturers are using nonwoven fabrics as backings for vinyl sheets.

The random-fiber nonwoven fabric provides strength and support to the exterior vinyl sheet and eliminates the need for heavier and costlier backing materials. Goodyear's



LAMINATION. Vinyl sheet and nonwoven fabric are combined in a single operation. After the interior surfaces are heated, the materials are fed between two pressure rolls and combined in a single unit.



ELECTRONIC WELDING. Three rolls of material form the finished product: (1) nonwoven material, (2) wadding, and (3) vinyl sheet. The commercial electronic quilting machine combines the three materials and embosses them in a stamp-move system.

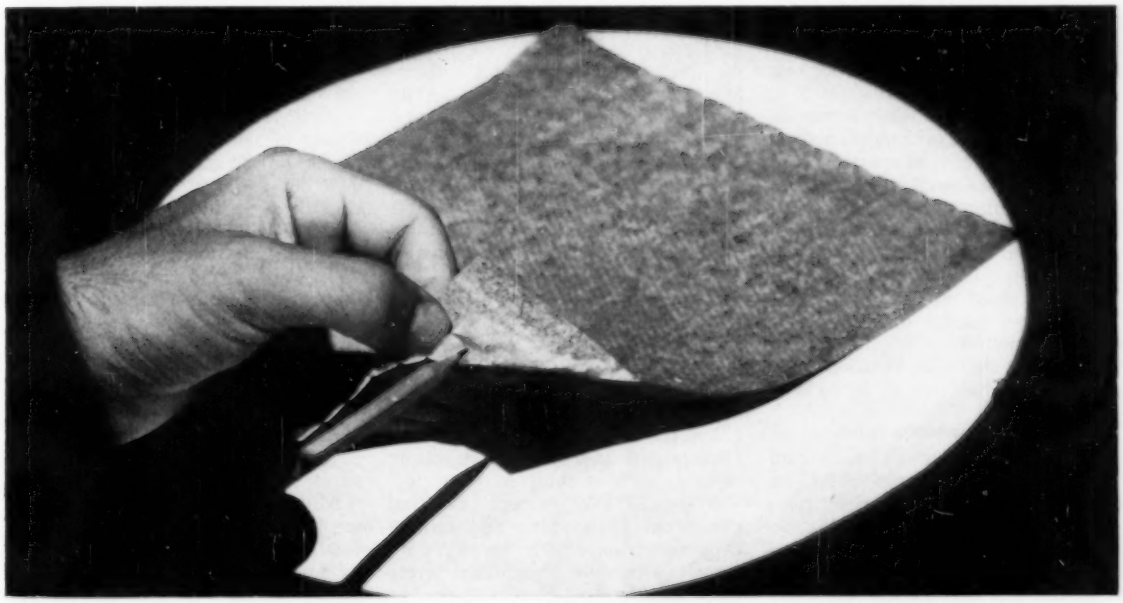
Chemigum latices are used as a bonding agent in the nonwoven fabric itself. The fabrics are made from cotton or synthetic fibers.

Three Processes Are Used

The nonwoven fabric is combined with vinyl sheeting by plastics converters and is then sold to automobile manufacturers. Three methods are used by the converters to combine the nonwoven fabric and the vinyl sheet: (1) coating directly on a calender, (2) electronic welding or quilting, and (3) laminating.

In all three methods, the nonwoven fabric adds thickness to the sheet, increases tear resistance, and aids the soft, pliable hand normally found in an unsupported sheet. The fabric still permits a desirable amount of stretch and recovery in the final structure.

Several colors of vinyl materials are used to coat the nonwoven fabrics. For example, one automobile manufacturer is offering 286 single colors and two-tone color combinations that are matched with the vinyl-nonwoven combination. Therefore, seat covers for the cars are all but eliminated.



UPHOLSTERY. The wadding between the vinyl sheet and the nonwoven fabric shows at the pencil point. The finished material stretches around corners without injuring the structure.

Alabama Mill Men Install Strict MAINTENANCE CONTROLS

Men reporting at the fall meeting of TOE are putting the screws on slap-happy maintenance practices and are developing definite methods to control maintenance. The methods include—

- **Inspecting and lubricating electrical equipment**
- **Controlling electrical start-ups and peak loads**
- **Keeping maintenance labor and supply costs in hand**
- **Care of humidity and air-conditioning systems**

THE SECOND SESSION of the meeting of the Alabama Textile Operating Executives held this fall at Auburn, Ala., was taken up with discussions of electrical and maintenance problems. Men from 13 mills participated in the discussion.

Electrical Practices

The first electrical question discussed deals with (1) inspecting electrical equipment, (2) systems for checking the quality of the work done by electrical maintenance men, and (3) the best schedule for greasing ball-bearing motors. Representative answers by mills are:

Mill A—"The interval between inspections of electrical equipment depends on the severity of operating conditions and the size of the plant. We gradually shortened and lengthened the periods between inspections until we found an interval that served our needs best. Therefore our present method is based on this study.

"We now inspect our equipment every three months. This period gives us the best balance between good maintenance and cost of inspection.

Time Clock Controls Jobs

"We use a time clock and a card we designed ourselves to check on the quality of work our electricians are doing. This card shows the department, machine number, job number, repairs done, parts used, and the time the job was started and completed.

"Each maintenance man uses several of these cards to completely cover his work each 8-hr day. From these cards, we get a daily check on the men and also on the maintenance trouble in the plant. The cards are filed. Then any complaint on maintenance or repairs of electrical equipment can be traced to the man who did the work.

"We think a ball-bearing motor with grease fittings and a relief plug should be greased every six months. We find that grease hardens in the bearing housing after the bearing has been in operation a long time. This hard grease cannot be forced through the small relief opening and is therefore forced into the bearing. The hard grease sometimes causes bearing failure."

Mill B—"Scheduled periodic checks are the answer to maintaining electrical equipment. We clean motors and switches once every six months.

"To check on our maintenance men, we have good supervisors. The supervisors spot-check each job as it is being done.

Overgreasing Makes Trouble

"We inspect sealed bearings once each year. At that time, we lightly grease the bearings that need grease. Damage can be done by overgreasing as easily as by a shortage of grease."

Mill C—"We inspect electrical equipment in spinning and carding departments once each year. We inspect weave-room equipment every three months.

"We keep records by machine number on all maintenance orders. The records show if the work is done satisfactorily.

"Ball bearings on motors in normal service are greased every two years."

Mill D—"Picker- and opening-room motors and starters are cleaned and given a visual check once each week. Spinning-frame motors are checked visually and are cleaned once each week by a cleaning crew of electricians and motor oilers. Card-room motors are checked once every two weeks by the same crew. Loom motors are checked each month by a motor oiler and electrician as part of their regular assignments.

"Our foremen check the quality of our men's work by close supervision. We also keep a record of all major repairs, breakdowns, and maintenance. The record includes the names of the men doing the work, material used, and the time taken to do the work. If the trouble is repeated, we check the record and make corrections.

"We grease motors running faster than 1,800 rpm. once every six months. Motors running slower than 1,800 rpm. are greased every 12 months."

Controlling Power Demand

Another electrical question discussed was power demand. Mill answers to the question are:

Mill A—"Our peak demand in starting the mill the first of the week occurs between 10 a.m. and 12 noon; so we are not concerned with the starting load. We have no plan to keep the load down when we restart the mill after a forced shutdown from bad

weather. "When the mill power is off, high voltage does not affect our lights because we are located near the power plant.

"To determine the time of our peak load, we use a chart to plot our kw. and kva. load. To reduce the power load during the peak period, we stop all machinery that doesn't interfere with production—pump motors at the filter plant, for example."

Mill B—"We start machines in a normal course after a power failure. We think we get as good results this way as trying to start machines by schedules. The demand meter records an average over a 15-min. period. We think all machinery can be restarted within this time without an excessive reading.

"Our voltage is not high enough to damage lights during shutdowns. But if we have trouble, we change the taps on the lighting transformer. The taps also give better transformer efficiency.

"We have made studies on a survey of power-factor changes, but we have done nothing to correct the power factor."

Mill C—"In starting up the mill after the week-end shutdown and after power failures, we start all motors larger than 25 hp. one at a time. Then we start smaller motors by lines.

"High voltage during shutdowns burns out an excessive number of light bulbs. We do not have a method of correcting the burn-outs. However, we don't have too much trouble because we have capacitors.

Capacitors Control Power

"Since we installed capacitors about 10 years ago, our voltage chart remains uniform without a visible peak demand."

Mill D—"The best bet in keeping the power factor down during the start-up is to have the mill warm, especially in the winter. When machinery is cold, it takes a long time to start up.

"We do not have high voltage on our lights during shutdowns. The regulators on our supply line from the substation hold our voltage constant.

"Our electric meter has a demand meter-recording chart. We check the demand load each day. When the peak load is the same day after day, we change our operations slightly to even the load."

Mill E—"Our system for starting up the mill after shutdowns is: (1) start air compressor motors; (2) card-room, start all 20-hp. motors or over one at a time; (3) spinning room, start all 20- and 25-hp. motors one at a time; and (4) weave room, the switch is thrown, and then each individual loom motor is turned on.

"High voltage during shutdowns burns out light bulbs. We changed from 120-v. bulbs to 130-v. bulbs and have fewer burn-outs."

Maintenance Practices

A discussion on general maintenance practices followed the group talks on electrical questions. Mills are attempting to keep track of labor costs on production equipment and on installing new equipment. Reports by mills are:

Mill A—"Our maintenance supplies or machine replacement parts are charged to production departments when they are received. They are kept in a store room away from the general supply room.

"The supply cost is recorded and given to the department overseers each week. The labor cost is charged to the department where the work is done.

"We do not keep individual machine records, but we do use an overhauler's check card that lists replacement parts. The total number of parts used on a given group of machine is tabulated. The check card helps in determining whether improved parts are practical.

"We do not separate routine labor costs from labor in installing new equipment except in large installations. On large jobs, we use a project number; and labor and material are charged to the number. We try to keep both labor and material costs within the budget of the project number."

Mill B—"We use a prorated method with overhaulers' labor charged to each mill in our group. The system is a sort of pool method. We lay out a given amount of work to be done, and each mill is given enough maintenance men to do the job. Each mill, in turn, pays its share of the over-all maintenance costs. If extra work is done in a mill, an extra charge is made to the mill for labor and material.

"We keep an individual record of maintenance to each machine. Separate records are kept of costs of routine overhauling and installing new equipment. We control this cost by having adequate supervisors to assign jobs to employees to keep them busy."

Production Pays the Bill

Mill C—"Manhours for all maintenance work are charged to the production department where the work is done. But we do not keep an individual record of each machine. We keep labor costs for routine overhauling and installing new equipment separate. Labor cost sheets are made each week and are given to the department heads. These sheets are reviewed with the superintendent at cost meetings."

Mill D—"We attempt to keep up with labor costs by using a time clock and a card for every maintenance job. But it is very difficult to be accurate, and the system involves a lot of office work. We do not keep individual machine records on maintenance work and supplies."

Answers to the last question of the session show that mills are constantly maintaining their humidification and air-conditioning systems to keep them in good condition. Mill practices are:

Mill A—"We clean the nozzles of our atomizers once every 24 hrs. We overhaul spare heads and use them to replace damaged heads.

"We have screen filters on a gravity-feed system to keep the water clean. The reserve boxes are cleaned out every six months. We change the filter in the high-pressure atomizer system about every two years. We flush out branch lines each month."

Mill B—"We have atomizers only in our weave room. One man maintains all the equipment and repairs the heads. We use a chemical additive to keep the water clean.

"Another man maintains our central-station air-conditioning system. So far, we haven't had to paint the equipment. We use a product in the central station to keep it clean. The product keeps the lint off the equipment."

Central Station Cleaning

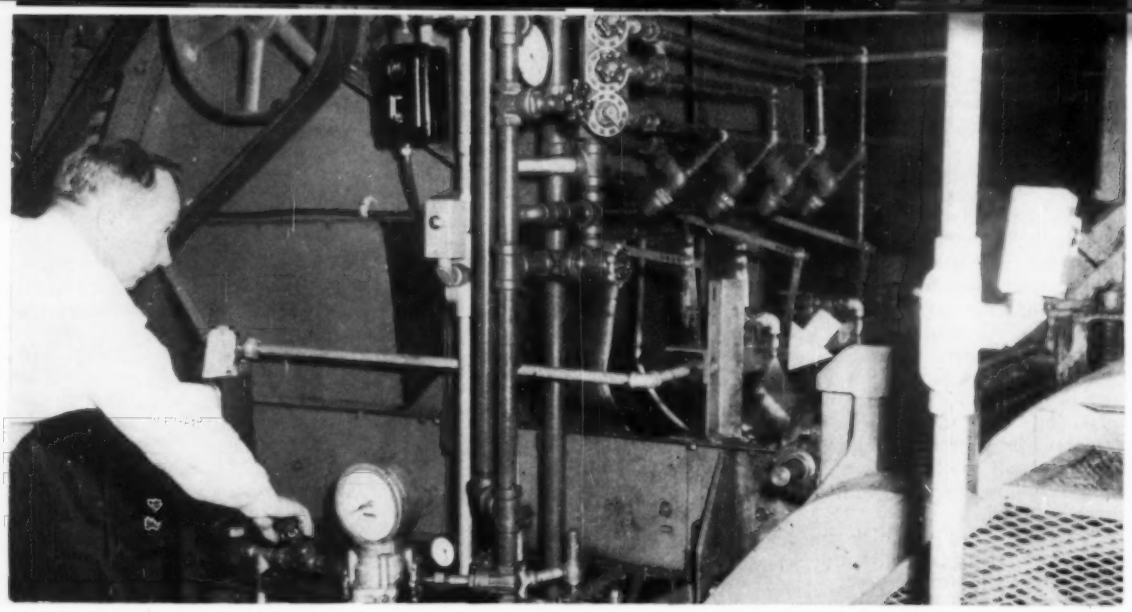
Mill C—"We blow out all our air lines and clean them the first thing each morning. Loose lint is cleaned from the controls each day. All heads not working are changed each day. The complete system for the whole mill is inspected at the beginning of each day.

"Atomizer heads are cleaned regularly, and worn parts are replaced. Water boxes are checked every two months; and lint, scales, etc. are cleaned out. Controls are checked and calibrated each week with a sling psychrometer."

Mill D—"We clean our central-station system twice a week and paint it every two years. We use a cleaning solution to take the lint off and use pine oil for a disinfectant."

Mill E—"We paint our central-station equipment once a year. We use a rust preventive for the first coat, and then we use a coat of aluminum paint."

Mill F—"We clean the central station each week by washing it down with water. We have applied a mastic material to our central-station tanks."



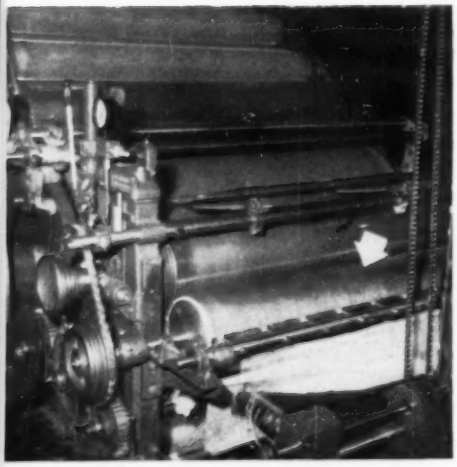
OIL EMULSION (arrow) in carefully regulated quantities is applied to the wool as it passes through the first unit of the roller-distributor

Blending Is the Key to Good WOOL-ORLON Yarns

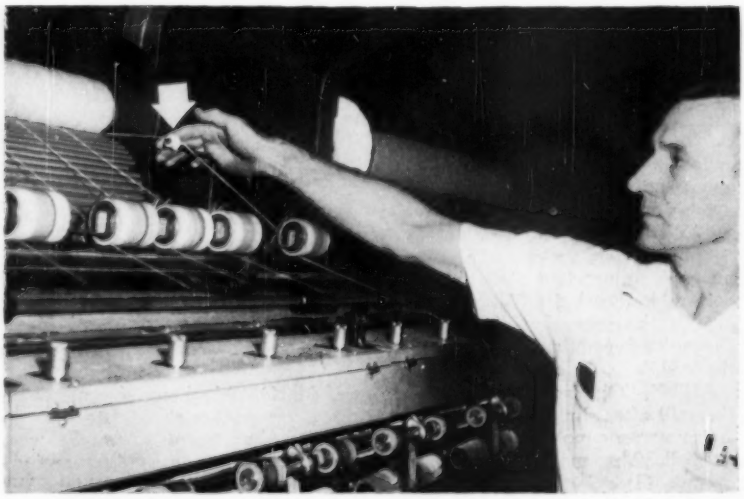
Here's how a Southern woolen mill blends wool and Orlon to make yarn for high-style fabrics. Machinery modifications include—

- Parallel-ground Peralta rolls on cards
- Webb support rolls on cards
- Thomatex clearers on spinning frames
- Smaller rings for higher-speed spinning

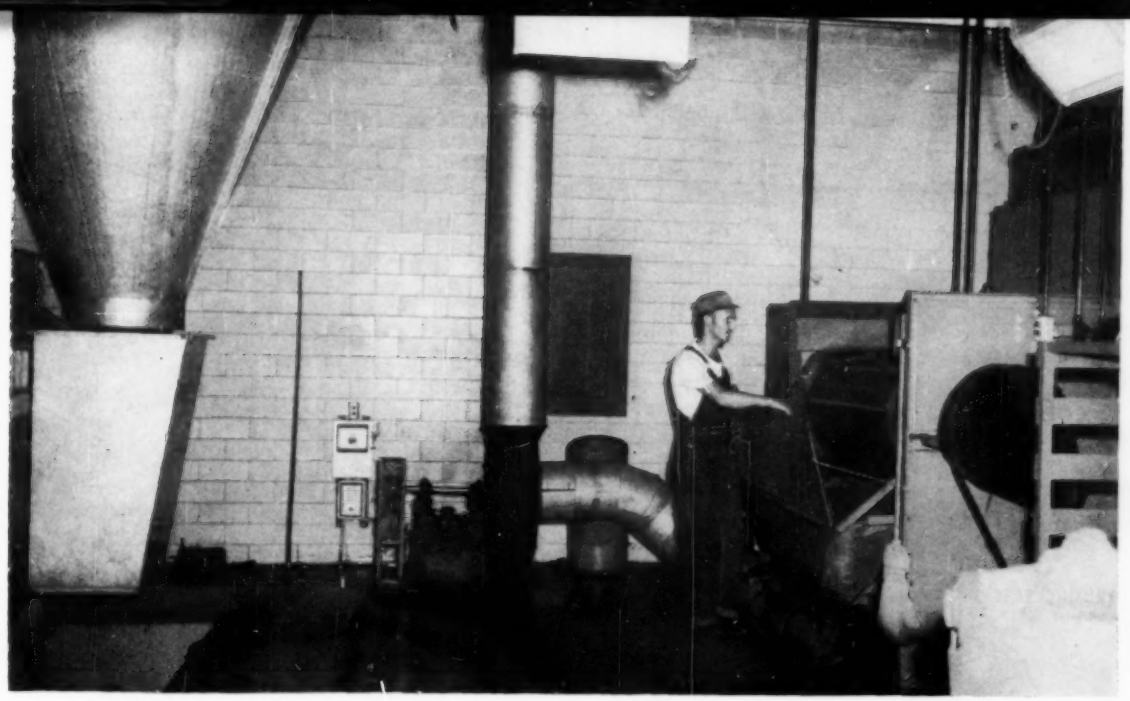
By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD



PARALLEL-GROUND PERALTA ROLLS (arrow) equipped with a hydraulic-pressure device were added to the cards.



PORCELAIN GUIDES (arrow) at the end of the jack spool prevent the roving from rubbing. Rolls have been spread out.



A CONDENSER on the front of the drying train gives additional opening and fluffing of the dyed stock before it is baled.

CLOTH MADE FROM WOOL-ORLON BLENDS hit the market less than five years ago. One of the larger textile organizations, recognizing the importance of this new market, built a plant from the ground up to manufacture wool-Orlon fabrics specifically for women's wear and a wide variety of other dress goods. The mill also produces tweed-like cloth for men's sports jackets and novelty fabrics of many kinds.

The plant is extremely flexible. It is not unusual for 250 different styles of yarn to be in process at one time.

Fabrics are made from two basic blends of wool and Orlon: 55% wool with 45% Orlon and 35% wool with 65% Orlon. Wool is 62s for the finer numbers and 58s for the coarser numbers. Orlon for the finer numbers is 3-den., 2½-in. staple; for the coarser numbers, the Orlon is a blend of varying-length stock and staple.

Blending and Dyeing

Wool is blended before dyeing. The Orlon is blended also if it comes from different lots. The blending is done by a new Proctor & Schwartz roller-distributor that has a production capacity of 5,000 lbs. per hr.

Full bales of wool or Orlon are opened by the first unit of the roller-distributor. This unit consists of a bale breaker, a feed apron, a hopper, a 60-in. picker, and a condenser.

The opened stock is pneumatically fed to the rollers on top of the first chamber of the roller-distributor. When a predetermined amount of fiber is spread over the rollers, an electronic device opens the rollers and

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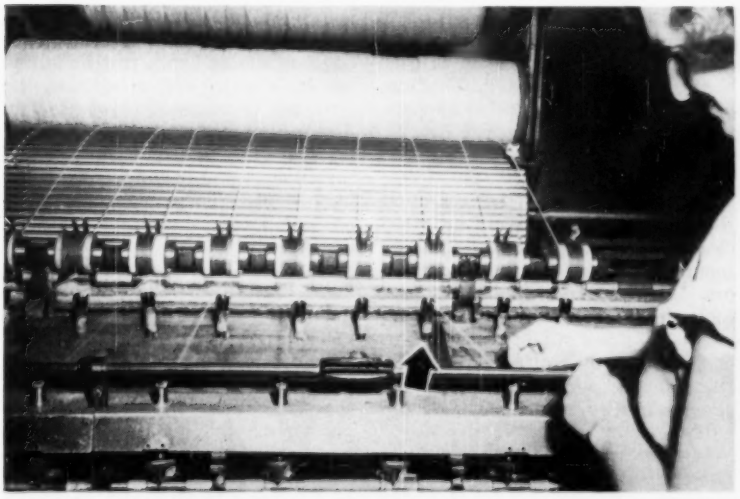
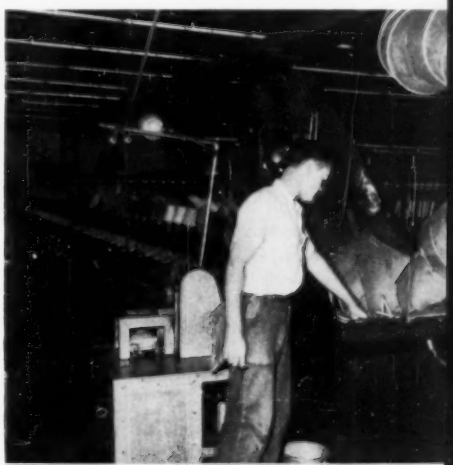
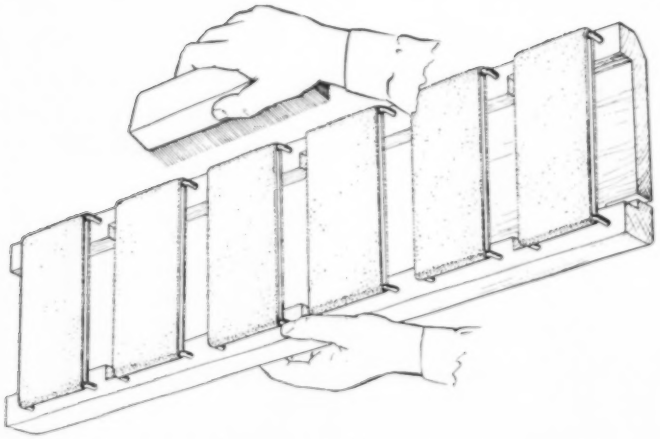


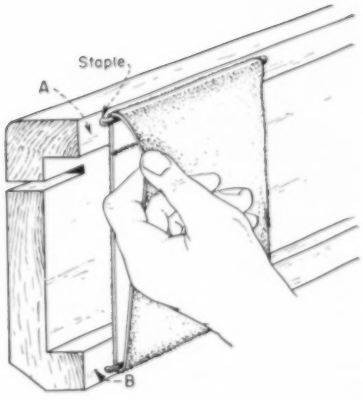
BROKEN ENDS are picked up by Thomatex clearers (arrow), which are being installed on all frames. Jack spools are made of aluminum.



A BOBBIN LOADER automatically keeps the Whitin-Schweiter winder supplied with empty bobbins without manual loading.



BRUSH CLEARERS every six months to renew the felting action and to remove flakes of grease and dirt.



TURN CLEARER CLOTH every two years by moving seam from *A* to *B*. Do not strain the seam by pulling it under the staple.

Top-Roll FLAT CLEARERS— How To Make Them Wear Longer

• Loose staples and flapping clearer cloth cause a lot of bad yarn in the average mill. Here's a method of repairing clearers that saved one mill $2,400.

By JACK ALLAN

PERHAPS you've got new flat top clearers on your spinning. If the clearers are on 100 frames or so, you've probably got a clearer investment of $12,000 in your spinning room.

Based on the average experience of our company, you can expect to start losing some of that $12,000 right away from accidental damage. In five years, you can expect a lot of clearer wear that will require repair or replacement. In 10 or 12 years, you will be near the bottom of the barrel. And in 15 years, you should be out your full $12,000.

Each year of life you add to your clearers is worth $800 or more. The critical period of clearer wear begins after the fifth year. Here's how we know it pays to keep up clearers in our mill.

After the fifth year of use, it was a common sight to see loose clearer flaps on our frames. Staples would come loose from the wooden base and free one end of the clearer cloth. When operators picked up the clearer, the cloth flapped over the rolls. This action would drop waste, make gouts, and cause ends down.

The tip-off on the seriousness of our situation came when we noticed the operators carefully fold the loose cloth back into place, set the board down, and walk away, fully confident that no one wanted the clearer fixed. That was before we analyzed just what happens to clearers during the average day.

Operation Is Analyzed

A study of our frame operation showed that someone picks up a top clearer every 1.4 secs. in the spinning room. We pick top clearers every 2 hrs. On 100 frames of 228 spindles each, the roller pickers raise the clearers 15,200 times in 8 hrs. Add to this figure the number of pickups by oilers, spinners, and section men; you come out with roughly 20,000 pickups a day.

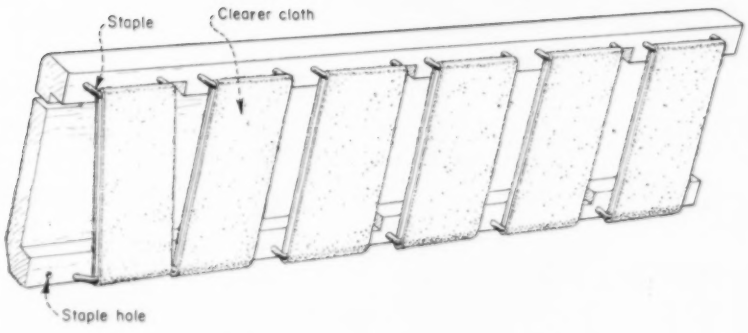
It takes only a relatively few loose clearer flaps or faulty clearer boards to make a significant figure out of 20,000 pickups a day. For example, if 5% of the staples are loose, you're handling a loose flap over 900 times in 8 hrs. We estimated that we were spending 54 mins. a day extra just to reset the loose flaps on the rolls.

The felting action of the clearer cloth on a loose flap is practically useless for cleaning the rolls. Also, the cloth may be ruined if allowed to flap. At the time of our survey, we found many fixers using nails, sharp pieces of sheet metal, and baling wire to repair loose staples. These makeshift methods did not work well and increased the clearer problem.

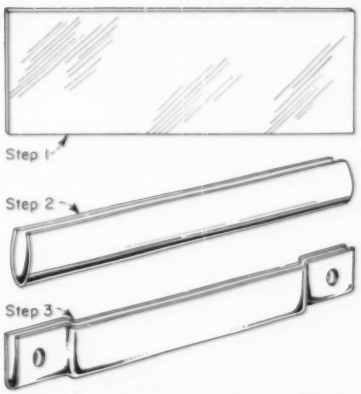
How To Repair the Clearer

We developed a method of repairing clearers having loose staples, the most common cause of clearer failure. The illustrations, Figs. 3 through 7, show how the repair is made; we simply replace the loose staple with a homemade fastener.

The fastener is made from a piece of thin-gauge sheet metal, preferably aluminum, which is rolled, bent, and



LOOSE FLAPS, caused by staples pulling loose, should not be repaired with wire, nails, or sharp sheet metal; use fasteners.



CLEARER-CLOTH FASTENERS are made of aluminum strips rolled, bent, shaped, and drilled as shown.

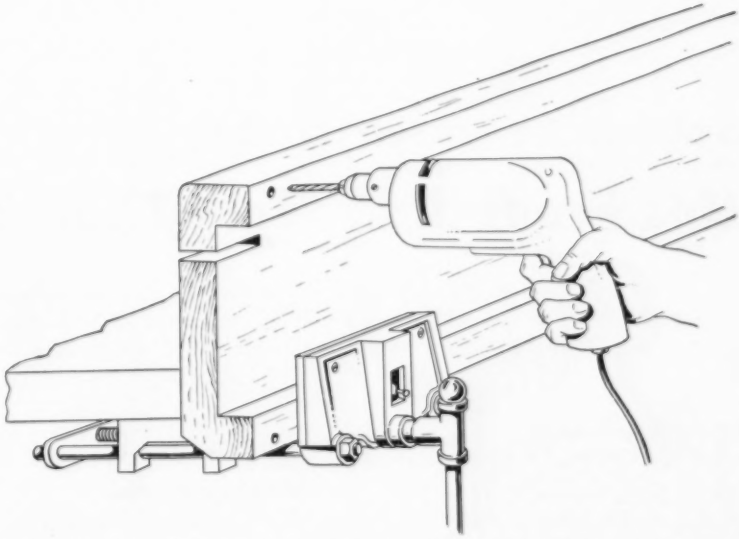
shaped in three steps, as illustrated in Fig. 4. Holes are drilled in each end of the fastener, and aluminum screws are used to attach it to the clearer block. If the staple holes have become worn or distorted, we drill or ream them out to assure good gripping action on the screw. Screw sizes are slightly larger than the diameter of the hole. A quantity of fasteners should be made at one time to assure uniformity.

When a clearer with loose cloth is to be repaired, the fastener is passed through the clearer-cloth loop with the rounded edge against the cloth to prevent abrasion. The holes in the ends of the fastener are then registered over the holes in the block, and screws are inserted and screwed down. The clearer cloth is now securely held, and it seldom pulls loose before wearing out.

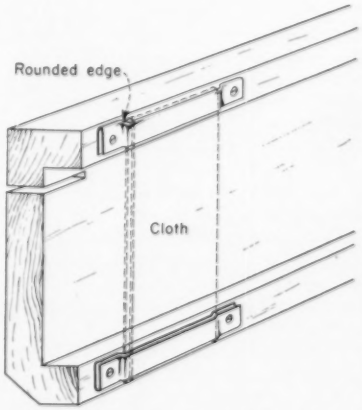
Fixers Get Training Aid

After we developed the fastener and method of using it, the next job was to educate the fixers and section men to the importance of proper care and maintenance of the clearers. A series of simplified drawings was made to help sell the idea. In fact, we went a step beyond describing the construction and use of the fastener; drawings also were made to illustrate the importance of brushing and turning the clearer cloth periodically. These pictures turned out to be valuable training aids for teaching operators to look for clearer defects.

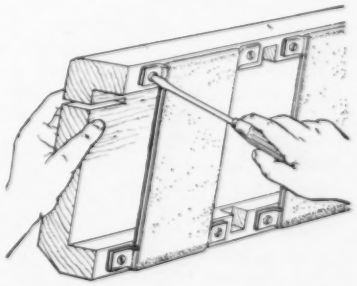
We estimate that the new repair technique and the use of the illustrations in training have added at least three years to the useful life of our clearers. A lot of bad work was prevented and our frames are in better condition than before. We know that we saved at least $2,400 that would have been spent for new clearers.



REAM OUT the staple holes so that screws will fit tight; do not force screws into distorted holes.



REGISTER the metal-fastener holes with the staple holes. Rounded edge of the fastener should be against the cloth.



SCREW down each end of the fastener after it is pushed through the clearer-cloth loop to hold the cloth securely.

THE NEW MILL BUILDING adjoins the old one and houses all the yarn-preparation equipment. Now, 322 new looms occupy all the space in the old mill.

Schwarzenbach Huber Ups Production More Than 200%

• From 20,000 loom picks per manhour on obsolete machines just five years ago, this modernized rayon-weaving mill has raised its production to 67,000 picks. New machines and methods coupled with fabric development turned the trick.

TAKING A BAD condition and molding it into an ideal one has paid off in dollar-and-cent profits for Robert M. Schwarzenbach, president of The Schwarzenbach Huber Co. Besides, his ideas have given continued employment to over 200 people at Altoona, Pa., who otherwise would have been out of work. A report of 10 months ago shows that 27% of the families of Blair County (Altoona) were subsisting on surplus commodities provided by the U. S. government; the figure for neighboring Clearfield County was 42%.

Schwarzenbach took the helm of the mill company just five years ago. At that time, the Juniata Plant at Altoona was a 62-year-old silk-weaving mill. The president before Schwarzenbach estimated that $100,000 would have to be spent to make the mill competitive. But because the mill was located in a general area being deserted by textile mills, he recommended closing the plant.

Schwarzenbach came into the deal as president at that time. His first problem was production costs. With obsolete equipment and buildings, the production output per man-hour was only 20,000 picks.

New Machines Installed

A lot of improvements have been made during the last five years. Over $1-million has been spent in modernizing the equipment and expanding and modernizing the building. No equipment is over seven years old. Wages have been raised 50%, and the present wage scale is 11% above the national textile average. From 20,000 picks per manhour, the production has been raised to 67,000 picks—over three times the former figure.

The 200% increase in productivity per manhour came from new machinery and improved methods. In spite of the 50% increase in wages during the past five years, weaving costs per yard have shown a slight decrease.

Schwarzenbach got in on the ground floor in weaving solution-dyed fabrics. To make the machinery versatile, he installed new looms, warpers, slashers, and other equipment. The filling winders are the only original equipment left, and they are automatic. Now many styles of cloth are woven from the relatively new high-bulk yarns. An average of 60 yarn colors is kept in stock for quick style changing. An average of 250,000 yards of cloth is woven each week.

During the last three years, production has been constant on a seven-day-a-week, three-shift basis.

Basic Workers Kept

Working along with Schwarzenbach in rebuilding the mill were Robert Zoelly, a young textile engineer in charge of production; Carl E. Schott, general manager since 1947, who came up through the Altoona mill from foreman; and W. H. Ballard, assistant manager, an experienced textile graduate. Foremen down the line and production workers have not been changed.

Schwarzenbach also has five other mills in much the same modernized condition. The accompanying article tells how yarn is processed and cloth is woven to make the outstanding record at the Altoona plant.

How Schwarzenbach Huber Weaves DOPE-DYED FABRICS

The Schwarzenbach Huber Co., Altoona, Pa., has all its 322 looms weaving dope-dyed fabrics. Many looms are weaving high-bulk yarn. Here are the methods used for—

- **Warping**
- **Winding**
- **Slashing**
- **Weaving**

By RICHARD B. PRESSLEY, Associate Editor, TEXTILE WORLD

PRODUCTION at the Juniata Plant of The Schwarzenbach Huber Co., Altoona, Pa., is entirely on dope-dyed fabrics. Many looms are weaving high-bulk yarns. Examples of woven fabrics are: (1) 180x62, 75-den. warp and 150-den. filling, and (2) 120x44, 150-den. warp and 350-den. high-bulk filling.

Yarn for the mill is thrown at Schwarzenbach's plant at Front Royal, Va. On all fabrics where it's possible, yarn is bought from Tennessee Eastman Co. on section beams. Therefore, two processes are eliminated at the plant so that more management attention can be given to weaving.

On special color combinations, a Reiner warper with a Kidde-Sipp creel are used. The warper is operated only on the first and second shifts. One employee on each shift operates the machine.

Humidity Is Constant

The warper is totally enclosed in a room by itself so that strict and constant atmospheric conditions can be maintained. An American Moistening Co. humidifier system is used. A Trane Co. air-conditioning unit supplies refrigeration. The humidity is held at 58% r.h.; the temperature is kept at 82° F.

The warper speed depends on the yarn denier being run. A warp of 75 den., for example, runs at 300 yds. per min.

The mill is equipped with two Kidde-Johnson slashers. One slasher has nine cylinders and the other has seven. The seven-cylinder slasher has a Reeves variable-speed drive, and the nine-cylinder machine has a remote-control Reliance drive.

The two slashers are totally enclosed in a single room. Overhead exhaust fans draw off the hot air, and hoods over the slasher cylinders are eliminated.

No piping is exposed in the slasher room. All piping is underground. Pits are built into the concrete floor under the slashers for washing and drainage.

Section beams and loom yarn beams are handled by two spans of American MonoRail systems running lengthwise with the building.

Both slashers have identical single quetsches. The bottom roll is stainless steel; the top roll is rubber-covered. In most sets, 8 to 10 section beams are used.

The cylinder temperatures on the nine-cylinder slasher beginning at the size box are No. 1 100° F., No. 2 170° F., No. 3 185° F., No. 4 190° F., No. 5 200° F., No. 6 180° F., No. 7 170° F., No. 8 170° F., and No. 9 100° F.

Two stainless-steel size-cooking kettles are located at floor level in the slasher room. The size is pumped to two storage kettles mounted directly overhead on a platform. Then size is fed by gravity through the underground pipes to the size boxes. Each size kettle and storage kettle in tandem supplies a separate slasher. The cooking equipment was manufactured by Piedmont Machine Co.

Formula for Dope-Dyed Yarn

Size formulas vary with the yarn being slashed. A 100-gal. mix for a taffeta warp consists of 58 lbs. of Evalan, 12 lbs. of Colloids 216, and 6 lbs. of ammonia. The temperature of the size box on this formula is 120° F. The slasher cylinders are not covered with cloth. However, on a gelatin mix, the first three slasher cylinders are covered with cheesecloth.

Since all lifting and other heavy work has been removed from the slashing operation by the beam-handling system, a woman assists the operator. So there's one man and one woman operator on each of the two slashers.

The slashers run at 28 to 40 yds. per min.

All filling is wound on Whitin-Schweiter automatic winders. The equipment consists of 12 machines with a total of 300 spindles. Again, the machines are located in a totally enclosed room so that the atmosphere can be controlled closely. The temperature is 82 to 83° F., and humidity is 58% r.h.

100 Bobbins per Cone

Cone sizes on regular solution-dyed yarns are 3.6 to 4 lbs. About 80 loom bobbins 7⅞ ins. long are wound per pound of cone yarn; a full cone gives 80 to 100 bobbins.

Cones of high-bulk yarn weigh 1.48 lbs. About 24 bobbins are wound per pound of cone yarn; one cone gives a total of 45 bobbins.

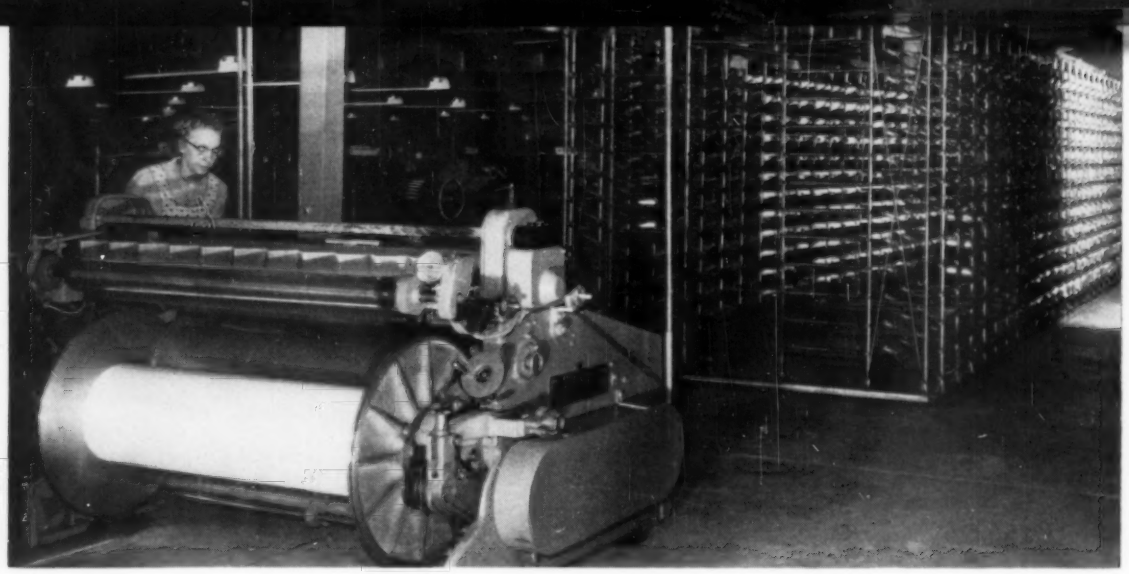
On high-bulk yarns, the yarn from only one cone of filling is put on a pinboard. When the cone on the yarn is exhausted, the pinboard is removed. This practice is to prevent filling bands in the woven cloth. A new pinboard of filling is not placed on a loom until every bobbin is removed from the old pinboard.

Spindle speed is 4,500 rpm. on one group of machines; on the other group, it's 5,200. In yards per minute, the speed is 252 to 280.

Yarn tension at the winders is checked with a Sipp-Eastwood tensiometer. A tension of ¼ gram per denier is standard.

Five winder operators handle all the winders on average yarn numbers. Their only duties are to piece ends and rack up filling. Extra employees keep the hoppers filled with empty bobbins. A foreman-fixer maintains all machines.

The thorough cleanliness that's apparent throughout the entire Schwar-



WARPER is used on color combinations that can't be bought already creeled. The Reiner warper has been moved from this location to a a totally enclosed room.

zenbach plant is shown by constant cleaning in the winder room. An employee-cleaner cleans all accessible parts around the yarn once each shift with a portable vacuum cleaner.

Warp yarns and filling yarns are stored together in the same warehouse before they are processed. The temperature averages about 75° F., and 55 to 60% r.h. is maintained. That is the approximate normal warehouse atmospheric condition without humidification equipment.

After filling is quilled, the loom bobbins are conditioned in the normal weave-room atmosphere for one full shift before they are placed on the looms. A vinyl-plastic material is thrown over the trucks holding the filling.

An average of 60 filling colors is run. They are mixed side by side on the winders.

Quills are stripped in a room adjoining the winder room. A 1955 model Terrell Type-L, S-4 bobbin-stripping machine is used.

Pin Dropping Saves Time

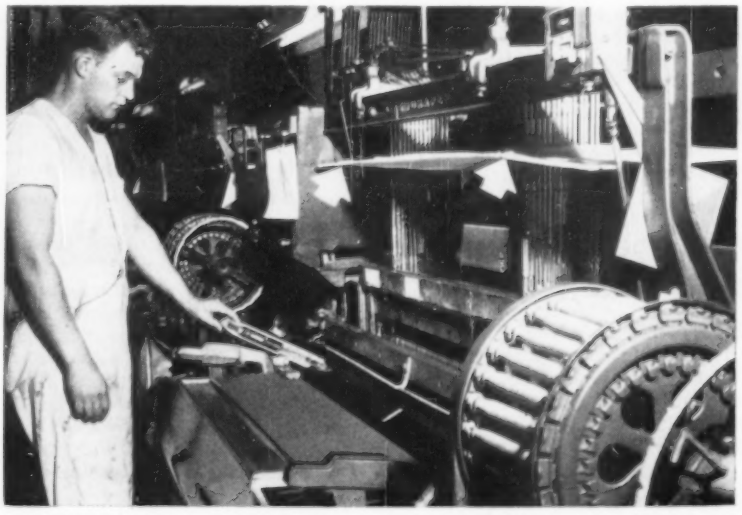
Only about 10% of the warps replaced in weaving are drawn in. The drawing-in hand draws the warp ends only through the heddles and reeds. Drop wires are dropped on the warp ends after the warps are tied in the looms. One girl on each shift drops the drop wires. The average time for dropping the wires is 4,000 ends per hour. But since so few warps are drawn in, the girls have additional duties.

The other 90% of warps replaced are retied with a Uster portable tying-in machine. The machine ties an 8,000-end warp in 20 mins. One man per shift operates the machine.

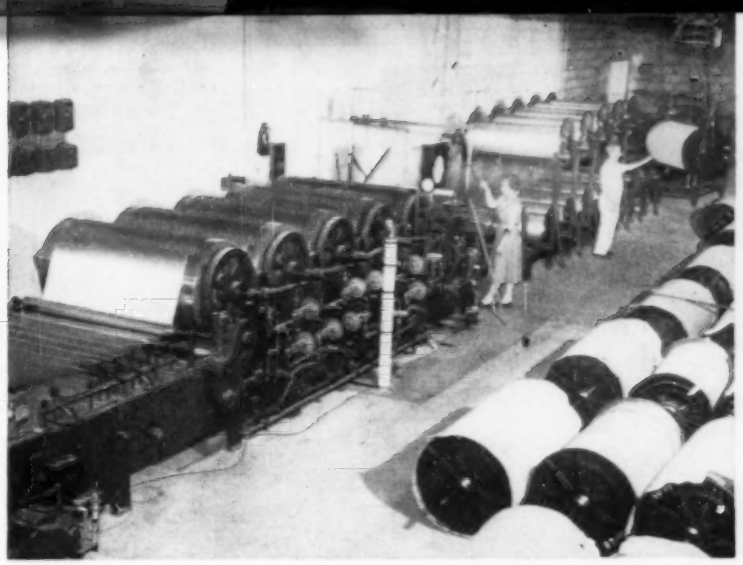
There are 322 Draper XD dobby looms. Loom widths are 178 50-in. looms and 144 46-in. looms. Of the 50-in. looms, 70 have dry-disk drives and 108 have Draper-Diehl drives. The 50-in. looms with the dry-disk drives operate at 164 ppm. The 50-in. Diehl-drive looms and the 46-in. looms operate at 176 ppm.

Yarn-beam diameters are 26 and 28 ins. The beams are all-steel and ad-

PIN DROPPING at the loom follows drawing in. This process saves time over drawing in because the girl drops 4,000 drop wires per hour.



DRAPER XD LOOM is running high-bulk dope-dyed yarn. Shield (arrows) on all looms catches falling dust and keeps it out of the woven cloth.



SLASHER, a Kidde-Johnson nine-cylinder model, is easily loaded or unloaded with the American MonoRail system. Speed is 28 to 40 yds. per min.

FILLING WINDERS are Whitin-Schweiter. The helper is filling the hopper with empty bobbins so that operators can give their full time to piecing ends. The yarn from only one cone of yarn is used to a pinboard to prevent filling bands in the woven cloth.

justable in length. Bobbins are 7⅞ ins. long with No. 5 butts.

All looms are set on mounting pads. Grade-A fur is used in the shuttles. To scatter the ends out in the warp stop motions, eight banks of drop wires are used. All looms have 2¾-in.-throw crankshafts.

Loomfixers fix on 64 or 65 looms. Weavers also have the same jobloads of 64 or 65 looms. Batteryhands have 17 to 65 looms, depending on the yarn number. On 150-den. yarn, for example, a batteryhand has 65 looms. Normally, jobloads for batteryhands are figured on a basis of 12,000 den. per batteryhand.

The weave-room supervisory staff consists of a shift foreman on all shifts. There's an extra supervisor, an assistant foreman, on the first shift.

Mill Runs 7 Days a Week

Since the mill runs constantly seven days a week, shifts are arranged in unusual and irregular order. There are five regular shifts instead of the usual three. Shifts are from 6½ to 9½ hrs. in length with a ½-hr. break for lunch. No employee works over 43 hrs. per week. The first and second shift employees exchange shifts every week; other shifts remain constant.

All wages on Saturday and Sunday are paid at time-and-a-half rate even if no other time is worked during the week. A weaver's pay, for example, for a 40-hr. week that includes weekend work is $100. (Time-and-a-half pay is not counted in the basic wage rate of the mill.)

Production is figured on a basis of 672 working hours in a four-week period. The efficiency average is 93%. Production for the 322 looms is 250,000 yds. of cloth per week. Veeder-Root 1-2-3-4 pick counters are used.

Looms are kept in good mechanical condition by checking them constantly and setting them with Draper Corp. gauges at warp-outs. Loomfixers examine each loom by a checklist and return it to good mechanical condition. Then the shift foreman rechecks the loom.

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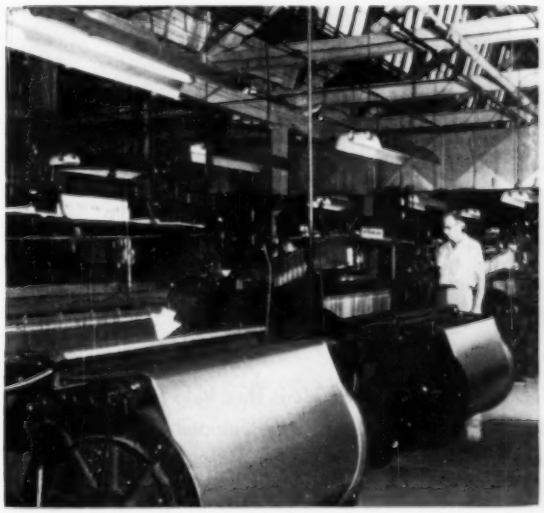
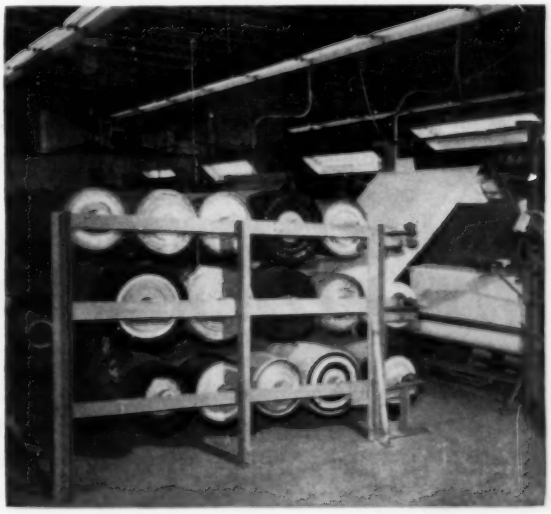
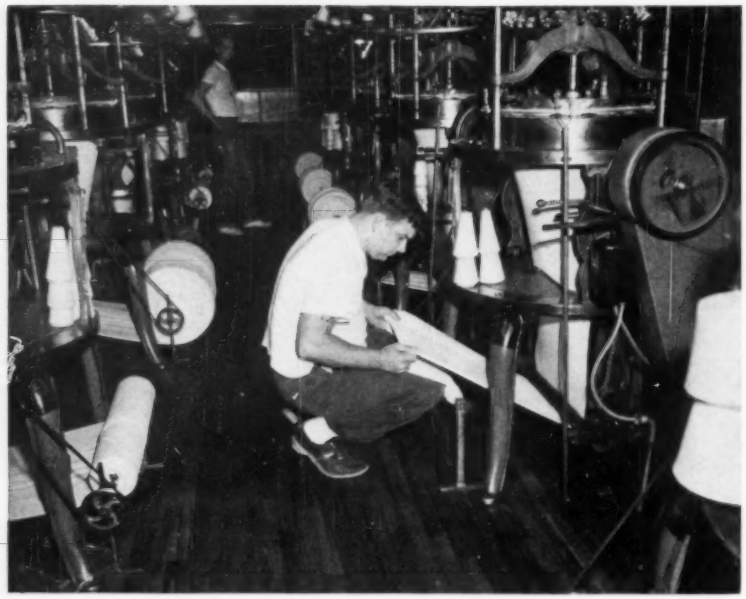


PLASTIC SHIELD (arrow) protects the warp yarn at the drop wires from dust and dirt. The shields are wiped with a damp cloth.



CLOTH-GRADING MACHINE holds up to 18 rolls of cloth in the homemade rack. Graders thread a new roll of cloth to the old one.



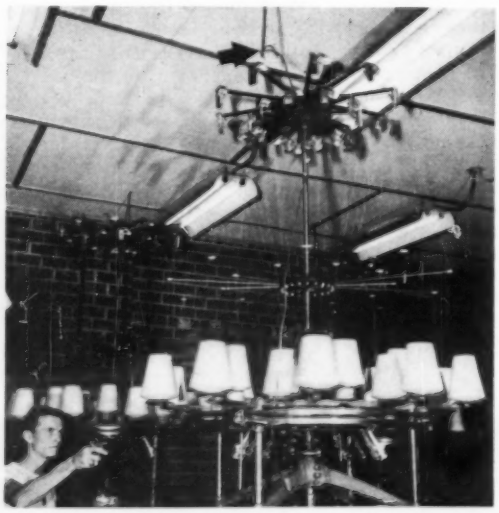
1 INTERLOCK FABRIC is rolled up in front of the machine for better examination. The knitter pulls off several yards every 30 mins.

6500

RAMSEUR INTER-LOCK KNITTING CO.
RAMSEUR, N. C.

DATE	KNITTER	INSPECTOR
11-1-55	21	H
STYLE	SIZE	MACHINE
RI-107	26"	#16
YARN	PC. NO.	WEIGHT
Rowan	RI-888	40-2
YARDS	REMARKS:	
91	1 L H	
DATE	KNITTER	INSPECTOR
11-1-55	21	H
STYLE	SIZE	MACHINE
RS-107	26	#16
YARN	PC. NO.	WEIGHT
Rowan	RI-888	40-2
YARDS	REMARKS:	
91	1 L H.	

3 KNITTING TICKET serves as a complete record for quality, and it prevents mistakes. Faults are recorded in the remarks column by the inspector.



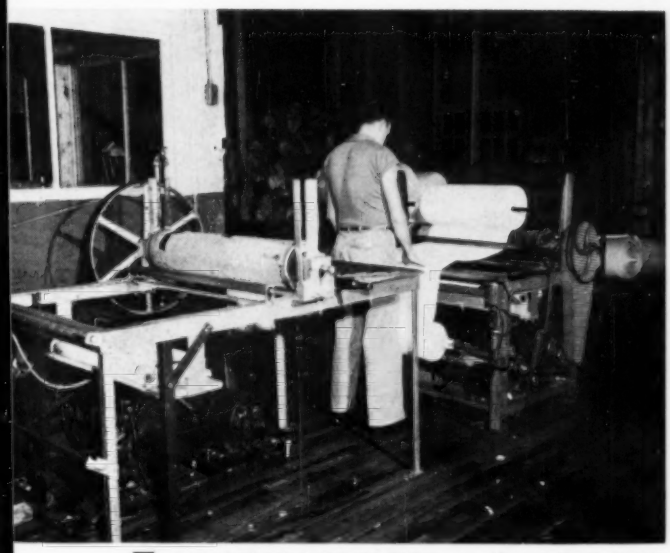
2 CLEANING UNIT has a copper pipe (arrow) to blow lint from the top stop motions. Fibreboard on the ceiling helps keep machines clean.

4 TICKETS are hung on hooks that are numbered according to the machine. Different colors denote different styles. Knitter just enters his number.

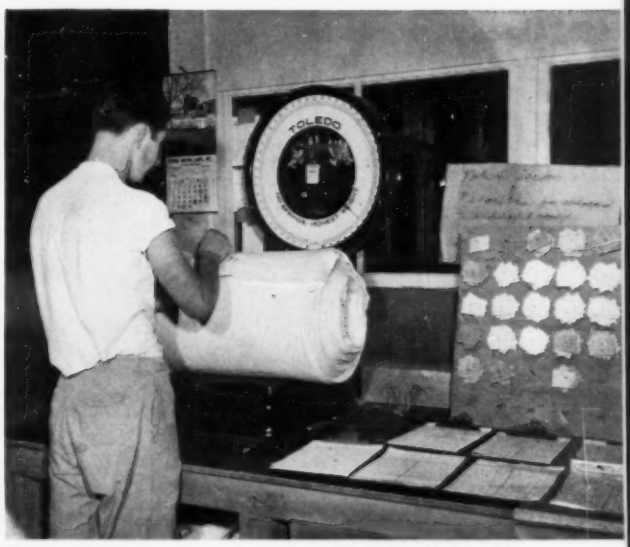
Quality Techniques for *INTERLOCK KNITTING*

• A young progressive knitting mill has come forward with some new ideas that help the mill to get fabric with fewer defects. Examining the fabric on both sides and measuring the length between certain courses are two of the techniques used.

By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD



5 TWO INSPECTING MACHINES are used to examine both sides of the interlock cloth. Faults are clearly marked by the inspector with indelible pencil.



6 INSPECTOR weighs the fabric and checks the yield. The bottom half of the ticket is retained on the board for the superintendent's check.

RAMSEUR INTER-LOCK KNITTING Co., Ramseur, N. C., has been in the knitting business for only nine years but has already attained a name for high-quality work. The mill knits cotton-interlock and wool-jersey fabrics. There are 11 Wildman and 19 Scott & Williams interlock machines and seven Supreme 64- and 96-feed jersey machines in place.

First-quality interlock fabric allows no more than one defect per 10 yds., but the average defects run about one in 30 yds. President Sam A. Rankin defines a defect to a knitter as "a fault that you would not tolerate on the front of your garment." He stresses to his knitters that one good roll of fabric is much preferred to 10 bad rolls.

Knitters work on time work; so they are not constantly pushed for production. Their hourly rate is increased periodically, if they do a good job, until they reach the top rate. Knitters are not penalized for bad work, but records are kept for every piece that is knitted. These records are prominently displayed, and this practice is helpful in keeping knitters on their toes.

To keep lint from important parts of the machine, an air blower is attached to each Scott & Williams machine. The mechanism is set to operate for 7 secs. at 2-min. intervals. The cam sections are blown off; and a copper pipe, suspended from the ceiling, runs from the unit to the top of the machine where the air blast is pointed at the top stop motions.

The air supply for the hand-operated air guns is kept at 90 psi. but is cut down to 55 psi. for the automatic blowers. The air guns are used only at the end of each roll when the machines are oiled.

All machines are equipped with individual drives, and the fabric is collected on a stand at the front of the machine. A metal stand, screwed to the floor, retains the cloth roll, which is turned by a pulley driven from the main drive shaft.

This idea keeps the fabric cleaner, makes lifting easier, and allows the knitter to examine the fabric better. Several yards of cloth are pulled from the roll every 30 mins. to be examined.

A foolproof system of checking yarns and orders prevents costly mistakes. Yarns are stored in a room off the knitting room in their original cartons sorted in their respective lots from the yarn spinners.

Knitting Tickets Are Foolproof

Order tickets are made out before the cloth is knitted and hung on the wall of the knitting room. There are 30 hooks on the wall to correspond with the knitting machines, and each hook is numbered.

As each roll is completed, the knitter removes a ticket from the wall and hangs it on the knitting machine. Different-colored tickets indicate different styles.

When a change of color indicates a change of style, an instruction sheet between the different colors shows the correct setup of the machine. Tickets for about one week's work are placed on the hooks at one time by the superintendent.

Three knitters operate the 30 interlock machine; and a simple system, which designates the knitter who looks after the first 10 machines as No. 1, is in operation. A second figure identifies the knitter's shift. A No. 33 on the ticket means that the third knitter on the third shift produced the roll of fabric.

Fabric Examined on Both Sides

The ticket is placed in the completed fabric roll, which is almost immediately examined and measured. Interlock cloth, because of its thickness, is examined on both sides. Two mill-made measuring machines are used in tandem. The first machine is used to examine one side of the cloth.

The second machine has a revolution counter, operating on the roller, to indicate the yards of fabric in the roll. Both machines have a lighted frame over which the cloth runs.

The inspector stops the machine when he spots a fault. He examines the fault and records it on the ticket. He will determine whether the fault is a drop stitch, lint hole, faulty yarn, tuck stitch, or closed latch. He marks the fabric at the fault with indelible pencil to point the fault out to the cutter.

The yardage is marked on the ticket, and the roll is weighed to the nearest ounce. The ticket is torn at the perforation and the upper half is sent away with the fabric.

CONTINUED ON PAGE 172

GRAY INSPECTION before dyeing is an important first step. Skilled graders repair weaving defects and insert missing pile loops by hand.

How Southern Dyes Rubber-Backed PILE FABRICS

To obtain level dyeing on high-grade, rubber-backed pile upholstery fabrics, this mill—

- **Starts dyeing at low temperatures**
- **Uses highly diluted dye solutions**
- **Adds dyes slowly**

By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

THE DYEHOUSE at Southern Pile Fabrics Inc., Greenville, S. C., handles the production of 30 pile-fabric looms and 50 jacquard-head looms in a compact, well-laid-out area that is easy to supervise. Eight stainless-steel covered dyebecks 5 to 8½ ft. in width take care of all dyeing.

All pile fabrics and many other styles are backed with rubber after gray inspection to lock the pile in position after the dummy filling has been taken out.

The rubberizing operation is done with a portable coating machine that is wheeled in front of the Kenyon dryer. Latex solutions are pumped to the trough of the coater; and the roll, rotating counter to the direction of cloth travel, applies the latex. Two doctor blades control the amount of solution supplied to the fabric. Drying and curing take place in one run through the dryer at 280 to 290° F. After rubberizing, the goods are put in stock to await dye orders.

Dye in Open Width

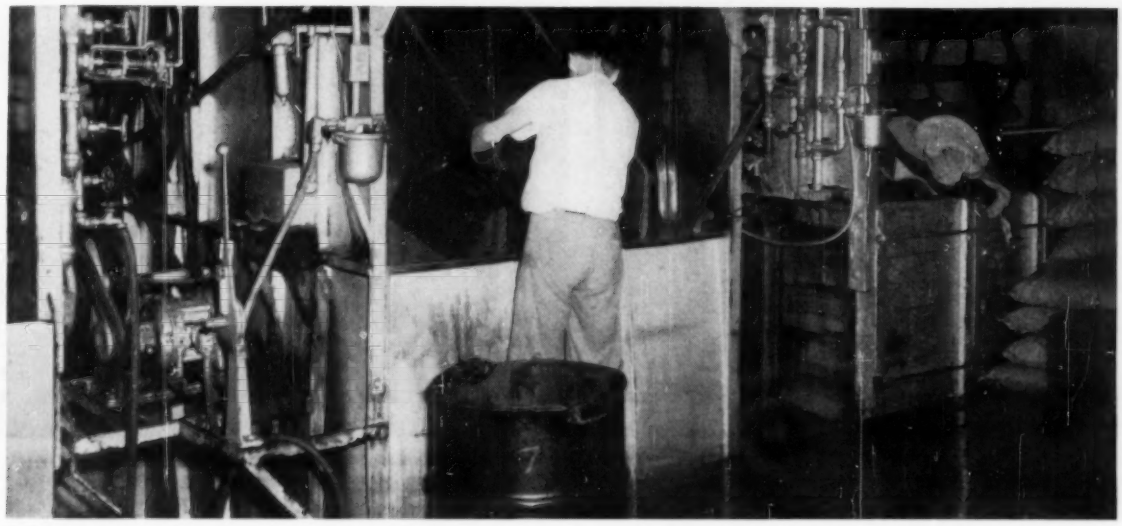
Because most of the styles are bulky and average 1½ lbs. per running yard 54 ins. wide, the goods are dyed in the open width. From four to six pieces are sewed end to end and run into the dyebeck. For nylon-face cotton-back fabrics, a 20-min. scour with a synthetic detergent at 120° F. prepares the goods for dyeing if they are going into medium or dark shades.

For light shades, the scour bath is run up to 190° F. to remove all traces of dirt or oil that would otherwise show up after dyeing. Where the higher temperatures are used, the bath is flooded over to reduce the temperature to 120° before any dyestuff is added.

Small Adds Important

Parker Walsh, dyehouse superintendent, has worked out dyeing methods suited to the type of fabric handled. Because of the rubber backing, the goods are fairly impervious to flow of dye liquor; and the dyebecks are designed to take one full width of fabric without an excess of wasted space. The circulation of dye liquor is therefore considerably more restricted than is the case where permeable fabrics, spaced to allow liquor flow between each piece, are being dyed.

Dyeing is started at 120° F., and the initial mix is dissolved in as much as 50 gals. of water to get a dilute solution. Then the dye is added slowly and as evenly as possible across the front of the beck. A perforated stainless-steel partition about 1 ft. from the front of the beck acts as a barrier



DYEBECKS are compact, specially designed for dyeing rubber-backed fabrics. The large drum is used for dye solutions that are made very dilute to insure level dyeing.

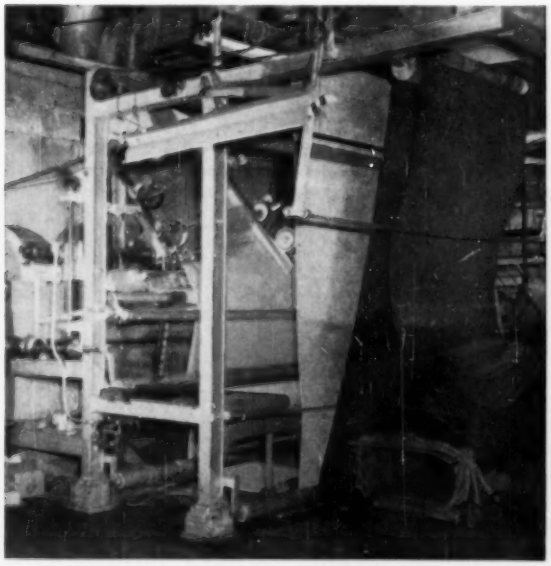
to too-rapid flow of the dye into the larger section that carries the fabric.

The temperature is raised slowly to 160 to 200° F., depending on the shade; and dyeing continues until the shade is matched. If dye adds are required, they are diluted with 15 to 20 gals. of water and added slowly. Small adds, well diluted, cut down the chances of getting overdyed filling streaks.

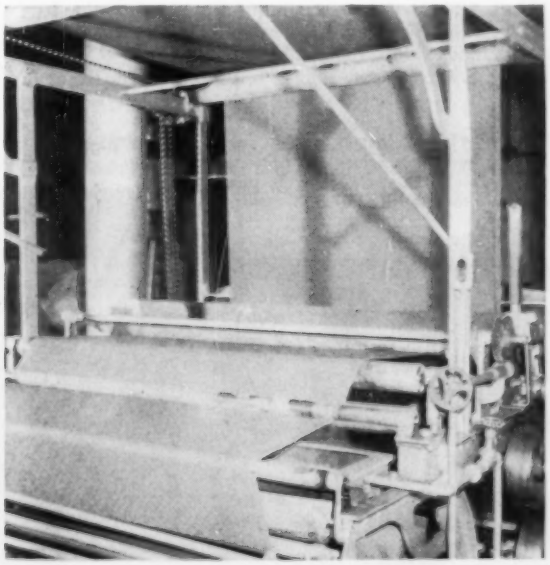
Styles that include mohair, cotton, and rayon on the face of the fabric are dyed with direct and acid dyes. Following a short scour in Igepon T plus a mild alkali, the bath is dropped; then acid and direct dyes are added to a fresh bath at 120° F. The temperature is brought up to 160 to 200° F., depending on the shade, in about 40 mins. and let run for an additional 25 to 30 mins. Then 25 lbs. of common salt is added for the first salting.

A patch is taken after 30 mins. in salt; and at this point, the lot may be let run as it is or more salt may be added. New shades may require an addition of dye, but any change is made slowly to avoid streaky dyeing. When the shade is matched, the load is cooled with cold water.

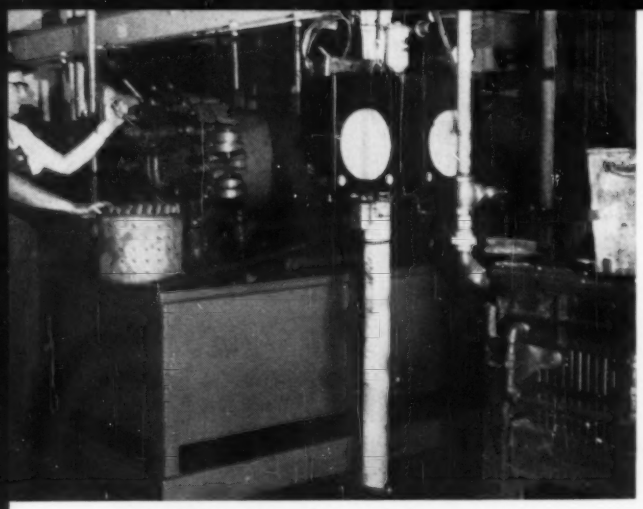
The majority of Southern Pile Fabrics' goods are extracted over a vacuum slot and dried on a multipass Kenyon pin frame. The final finishing operation consists of passing the goods through a steaming, brushing, and shearing machine that raises and levels out the pile. The finished goods are then carefully inspected, graded, yarded, and tubed for shipment.



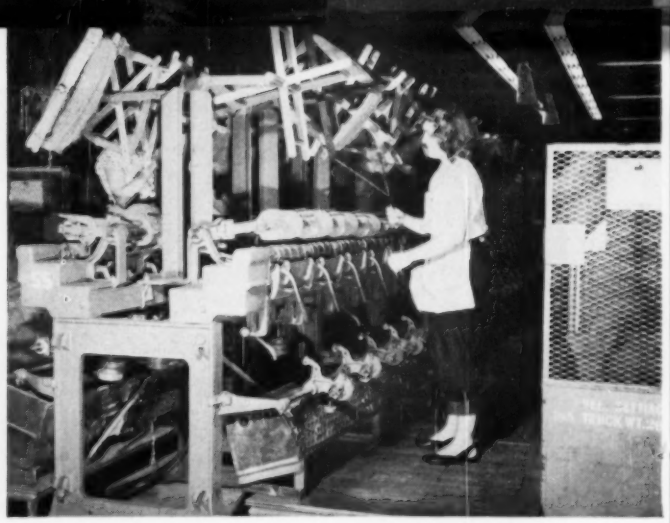
A MULTIPASS PIN FRAME handles all the drying requirements of the dyehouse. Goods enter and are delivered from the same end. Rubber backing is applied to goods by a portable unit not shown.



STEAMING, BRUSHING, AND NAPPING put the finishing touches on pile fabrics. Goods being steamed here go back over the steamer to the brushing and napping machine that evens up the pile.



FILLING YARN is bought already copped and is sized in this pressure-soaking and vacuuming process with British gum or starch.



WARP YARNS are wound on cheeses from skeins. Frieze yarns have gone through a special heat-treating process to lock in the crinkle.

New Wool CARPET-WEAVING MILL Swings into Production Fast

Starting from scratch in a new building, this mill got into full production in only 11 months. The work included—

- **Erecting looms**
- **Training employees**

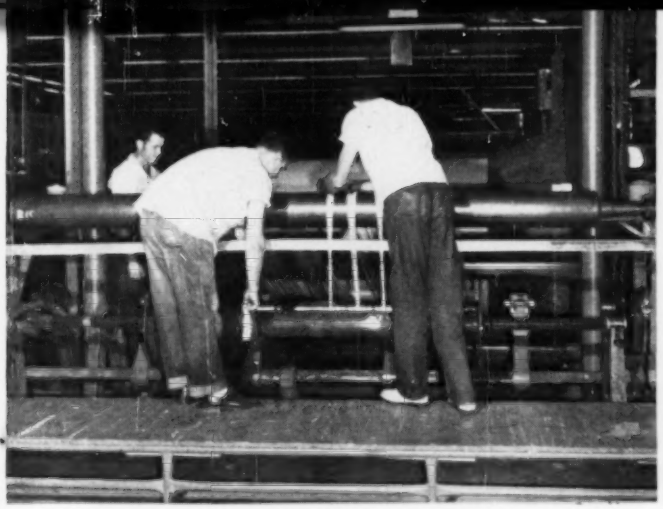
By RICHARD B. PRESSLEY, Associate Editor, TEXTILE WORLD

THE FIRST LOOM was put on the weave-room floor at the new plant of Alexander Smith, Inc., Velvet Div., Liberty, S. C., on Oct. 19, 1954. Just 11 months later, 54 looms were in full production in three-shift operation.

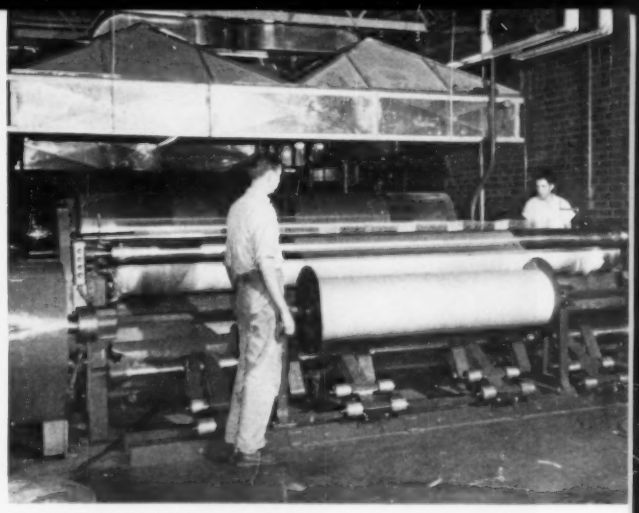
The looms were torn down and shipped from the old Smith plant in Yonkers, N. Y. Superintendent Allan E. Mirenghi, who came down from the Yonkers plant, says, "The

NARROW WEAVING begins on 27-in. looms. All looms have three beams; the frieze yarn beam is wool; the chain beam is usually rayon; and the third is kraft cord, cotton, or jute.

WEAVERS operate two looms on widths from 27 ins. to 9 ft. Wires form the frieze ends, which are either cut by the wires or left not cut.



SECTIONAL BEAMING on 108-in. beamers is the newest method of warping at the mill. Multiple sections 18 ins. wide consist of 144 ends.



COCKER SLASHER 144 ins. wide slashes rayon, jute, cotton, and kraft cord. Four warps 27 ins. wide are slashed at once.

production and quality figures at the Liberty plant after only 11 months of operation are already equal to those at the Yonkers plant, which was 90 years old."

The company is sticking close to wool frieze yarns in the carpet production, although research is being done on other fibers. Chain yarns for binding the kraft cord, cotton, or jute yarns to the frieze yarns are high-tenacity filament rayon on many carpets.

Examples of yarns used are:

Carracul carpets—frieze 3/13s wool, stuffer 15-lb. jute, and chain 1,650-den. rayon.

Chantuse—frieze 3/10.8s wool, stuffer 8/5 cotton, and chain 8/4 cotton.

Use Own Loom Motion

All looms used at the mill are velvet looms equipped with the Cochrane wire motion, which is Smith's own development. The wires are made and repaired in a special shop in the plant.

Several widths of wires may be used in any loom. Wires are made with a knife on the loose end to cut the pile as they are pulled out. Other wires are made without the knives to make loop piles. A third variation of the wire is made in irregular widths to form long and short pile loops, which give the carpets a patterned effect.

The looms range in width from 27 ins. to 18 ft. Loom speeds are: 27 ins., 106 ppm.; 36 ins., 90 ppm.; 9 ft., 54 ppm.; 12 ft., 50 ppm.; 15 ft., 38 ppm.; and 18 ft., 28 ppm. The two 18-ft. looms are made by Lansdowne Steel & Iron Co. Other looms are Lansdowne, Jones, and Alexander Smith's own looms.

Weavers tend two looms on looms less than 9 ft. wide. Weavers on looms 9 ft. wide and over tend only one loom. Weavers also get cans of filling from central locations in the weave room, and of course weavers change their own filling in the looms by hand.

Another weaver duty is to clean each loom thoroughly at the beginning of each shift. They clean the harnesses, handrail, loom ends, and the floor around and under the loom.

Each loomfixer has 15 looms. There's a general foreman of weaving on the first shift and a shift foreman on each of the second and third shifts.

Filling Is Processed

Filling yarn is bought on cops. Before the cops are used, they are placed in metal cans and put in one of two pressure drums where they are treated with British gum or a starch size. The cops are soaked under pres-

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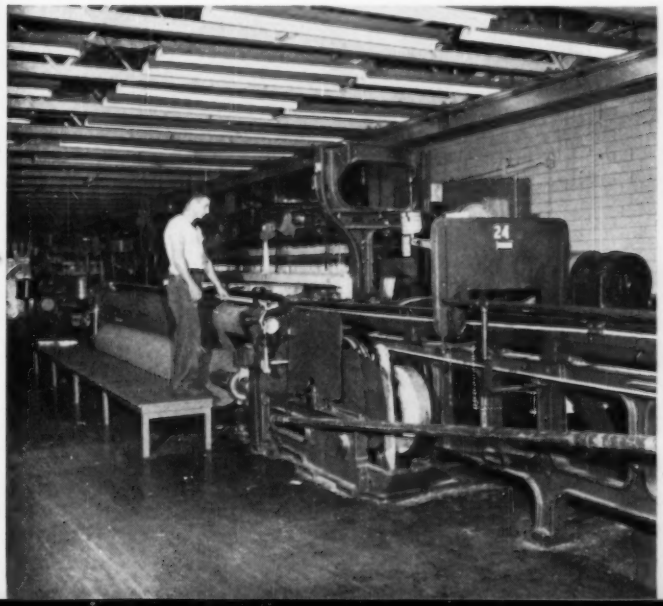
WIDE WEAVING begins at 9-ft. looms and goes through 18-ft. The 18-ft. Lansdowne loom here is the only loom operated by the weaver.



MENDING AND BURLING on these 18-ft. carpets are done on power-driven machines at the same time the carpets are inspected. Narrow carpets are mended on narrow machines. Latex backing is added at the next process.

BALE HOIST places cotton at any point in the opening room.

FEEDER OVERFLOW is fed to the third picker through this pipe.

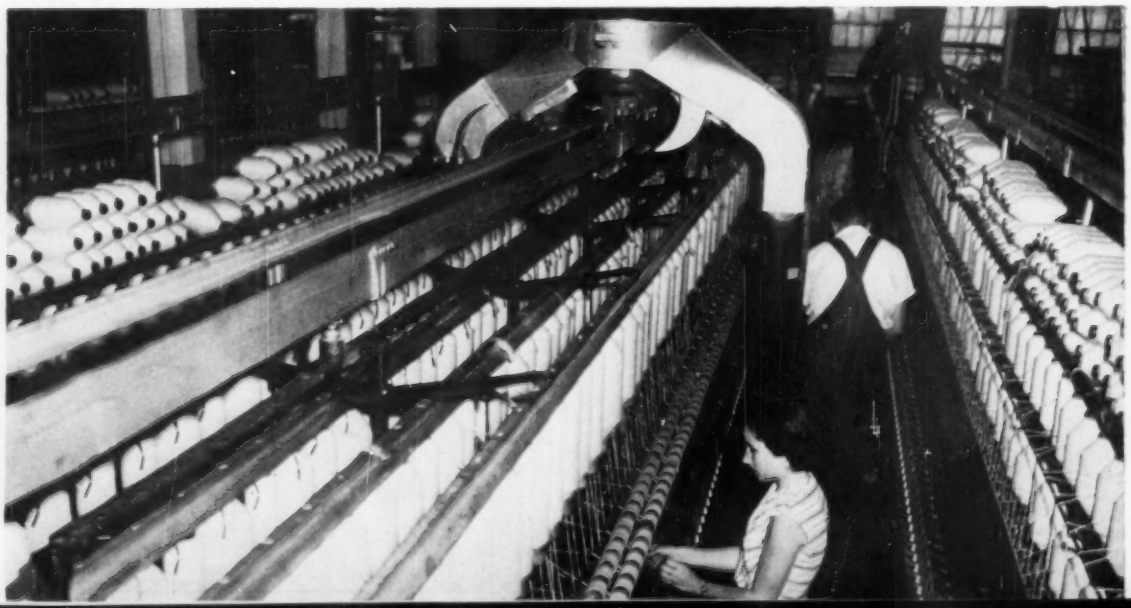
At Valdese— "Do-It-Yourself" Modernization

Valdese Mfg. Co., Valdese, N. C., spent $400,000 combining and modernizing its scattered operations. Most of the work was done by mill personnel without seriously interfering with production schedules. Highlights are—

- Opening and picking reorganization
- 16-in. card-coiler change-overs
- High-speed drawing conversion
- New spinning creels and drafting system

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

OPEN CREELS and new frame cleaners reduced manual cleaning 50%.



CARD SLIVER is now delivered into 16x36-in. sliver cans.

HIGH-SPEED DRAWING, eight-ends-up, runs 237 ft. per min.

VALDESE MFG. CO., Valdese, N. C., is completing the first of a three-part consolidation and modernization program at a cost of approximately $400,000. Original estimates were $800,000.

This 50% saving was accomplished by "do-it-yourself" methods. Nearly all the work was done by mill personnel in the traditionally thrifty manner of the Waldensians, who own and operate the plant. The current phase of the program primarily involves the consolidation of duplicate departments.

The opening room was completed first. Some new equipment was added, and old equipment was overhauled where necessary. Machinery was rearranged into one line that cleans 1,300 lbs. of cotton per hour.

There are eight blending hoppers that feed to a breaker hopper. Next are two new Lummus Super-Jet heads, in tandem, preceded by beater sections. From the Super-Jets, the cotton passes through a condenser to a new Superior cleaner. Air is recirculated and filtered by the Lummus system.

One Man Runs Room

An American MonoRail bale conveyor transports the cotton from an adjacent warehouse to the opening room, where the bale can be laid down at any designated spot. This conveyor system makes it possible for one man to run the opening room. In fact, the first-shift operator has only one arm.

Cotton is 1⅛-in. staple, Strict Middling, with a Micronaire reading of 3.8 to 5. Forty bales are laid down, and feeding is from all of them.

The two old picker rooms were consolidated into one; machinery includes three single-process pickers fed by a new Lummus automatic overflow feeder. Two of the pickers are fed in the conventional manner; the third is fed by a special pipe that catches the overflow before it returns to the feeder.

The Saco-Lowell picker has a Buckley breaker beater, followed by a three-blade pin beater; both run 1,160 rpm. The two Whitin pickers have two three-blade beaters that run 1,160 rpm.

The lap-pin troughs are covered with

CONTINUED ON PAGE 183

SPINNING-ROOM FLOOR was replaced without interrupting production.

E. ALLEN BENTLEY, retiring general chairman, directed the meeting.

LLOYD K. WILLIAMS led the question-and-answer session on slashing.

MAC ISAACS, JR., called on mill representatives for their ideas on maintenance.

This Is the Way Georgia Men Are SLASHING

Homogenizers—
"We save approximately $300 each week on starch"

Synthetic-Rubber Rolls—
"We get more uniform sizing"

Size Viscosity—
"Our machine cuts off automatically at the right viscosity"

THE TEXTILE OPERATING EXECUTIVES OF GEORGIA held their fall meeting in Atlanta recently. Men from 16 mills participated in the slashing discussion. Questions hinged around slashing results from relatively new equipment and around general practices in slashing yarn.

Outstanding reports on the equipment came from two mills:

Mill A—"By using homogenizers, we are saving about 25 mins. per kettle in cooking time. This time saving amounts to a saving of $4.50 per week in steam. However, the saving is offset by the power cost of the homogenizer, which is $15.50 per week. The cost of upkeep and repairs on the homogenizers is $8.60 per month for each homogenizer.

"Since we weave a large range of styles and weights of cloth, our savings in starch vary each week. We estimate that we save approximately $300 each week by using pearl starch.

"We have tried several different pressures on the homogenizers since we installed them and have settled on 3,500 psi.-ga. as the best pressure.

"We did a lot of experimenting on the amount of solids to use in our size formula, but we now use the same amount we used with thin-boiling starch. We use 16.9 oz. of solids per gal. of size.

"We haven't run any tests on loom stops and shedding on the homogenized size since we went to 3,500 psi.-ga. pressure. But tests made at lower pressures showed no significant difference in shedding or weaving efficiency."

Complete Slasher Control

Mill B—"We have new homogenizers and automatic controls throughout our slashing operation. The equipment gives us uniform size viscosity all the way through the process.

"We're still using thin-boiling starch because we have a supply on hand. But within a few days, we'll be using pearl starch.

"The equipment requires only a little care. We flush out the sizing system with running water after each batch of size is cooked. Once a week, we take the equipment apart and wash it out.

"We haven't used the new equipment long enough to check the results in weaving."

All mills reporting on homogenization indicate a reduction in cooking time over cooking thin-boiling starch. About the same amount of wax is used in the size formula. Homogenizer pressure varies from 1,500 to 3,500 psi.-ga. There is little, if any, difference in weaving between warps sized with or without homogenizers. Details of other mill reports are:

Less Starch Is Used

Mill C—"We reduced our cooking cycle 1 hr. We also reduced our starch costs by using pearl starch.

"We do not think we improved our warps for running and shedding, but we don't think we hurt the warps either. We had to decrease the amount of solids in the size formula by 18 to 20%."

Mill D—"We cook our size 20 mins. now. Before homogenization, we cooked the size 90 to 120 mins.

"In addition to savings realized by using pearl starch, we use less starch and less solids. The size penetrates the yarn better, and there is less shedding at the loom. We also have better efficiency in weaving. We use 1,500 psi.-ga. pressure."

Mill E—"Our cooking time without a homogenizer was 1½ hrs. With a homogenizer, the cooking time is

E. J. CROCKER led the discussion on weaving. Eleven subjects were discussed.

New officers elected by the Textile Operating Executives of Georgia are:

General Chairman: Alex Fife, Scottdale, Ga.

Vice General Chairman: George McMillan, Chickamaugua, Ga.

Secretary and Treasurer: Herman A. Dickert, Atlanta, Ga.

Executive Committeeman: Willis S. James, Summerville, Ga.

Executive Committeeman: Charles E. Rich, Milstead, Ga.

45 mins. We use the same amount of solids.

"We have a cost reduction of approximately $1.20 per kettle of size. We see no difference in size shedding or weaving. Our pressure is 1,500 psi.-ga. The homogenizer has not changed our size pickup."

Mill F—"On cooked size, we used this formula: 195 lbs. thin-boiling starch, 27 lbs. compound, 10 lbs. emulsified wax, and 123 gals. water. This mixture was brought to a boil in 35 mins. and boiled 15 mins. The size finished at 175 gals.

"For homogenized size, we use: 180 lbs. pearl starch, 20 lbs. compound, 10 lbs. emulsified wax, and 129 gals. water. We bring the formula to a boil in 35 mins. and boil for 15 mins. The size is finished at 175 gals.

"The pearl starch we use costs 60¢ per 100 lbs. less than thin-boiling starch. There is more shedding in weaving, but weaving qualities have not been affected undesirably otherwise. We use 1,800 psi.-ga. pressure."

Results From Rubber Rolls

Synthetic-rubber-covered rolls are resulting in more-uniform application of size at seven mills. Size pickup is increased up to 28%. Roll-covering costs are lowered. Mills say:

Mill A—"We use rubber rolls at both the front and back and get a more-uniform sizing job. Size pickup is 1% higher. We buff the rolls when they need it, which averages about once every two years. Yarns are from 9s to 34s; sets are from 1,950 to 8,715 ends."

Mill B—"The amount of size picked up on rubber rolls is about the same as that picked up on blanket-covered rolls. The rubber rolls give more-even application of size, and there are fewer stuck ends.

"We think the roll shafts will last longer because bumping from uneven rolls is eliminated. The rolls will pay for themselves in blanket savings within less than one year. Our rolls have been used six months without being buffed. They are run on 31s yarn with 28 to 30 ends per inch."

Pickup Is Increased 28%

Mill C—"We are using one rubber roll on the back roll of one slasher at present. We have run one slasher with rubber rolls on both the front and back rolls. The size pickup was increased 28%. The yarn is 14½s, 16s, and 19s terry. From 1,000 to 2,232 ends are run per set."

Mill D—"We have been experimenting with rubber rolls on both front and back rolls. These rolls do a better dressing job than rolls covered with wool blankets.

"We have been able to increase the slasher speed from 35 to 52 yds. per min. on a three-cylinder slasher. But the size pickup is 3% lower. Warp yarns are 21s with 86 ends per inch."

Mill E—"We have used rubber rolls for 15 months on the back rolls of two slashers. We haven't had to buff the rolls yet. The size pickup is about the same as that of wool blankets. Our yarns are 30s with 12 to 60 ends per inch."

Ways To Test Viscosity

Various methods are used to test and control size viscosity. In some mills, tests are made by hit-and-miss methods. In others, scientific instruments are used. A cross section of mill reports is:

Mill A—"Our machine cuts off automatically when the desired viscosity is reached. We cook one formula to 30 cp. and another to 40 cp. The control is set on the panel board before cooking is started. Other testing equipment in the size room is used to make several checks each week to see if the controls are performing accurately."

Mill B—"We have a viscometer on one slasher that records the centipoises on a chart. Then we check the size from the other slashers by the slasher equipped with an instrument. We make laboratory checks every day for size and moisture content of warps.

"We use four small predry cylinders and one large 5-ft. cylinder on our high-speed slashers. Size viscosity depends a lot on a reliable man to make size and on maintaining proper temperatures and homogenizer pressure."

Mill C—"The only instrument we have for measuring size viscosity is a recording viscometer, which is used in a storage kettle that holds our heavy size. The size man carefully weighs and measures the ingredients that go into each kettle. Each kettle is brought to a boil and cooked the same length of time by automatic controls.

"Homogenizer pressure is kept standard at each kettle. We keep the homogenizing surfaces of the valve and valve seat in good condition by lapping them once each week."

Larger Warper Beams

Only one mill reported on its results in changing to large warper beams. Here are the comparative data for 20s warp yarn before and after the change:

	26-in.	38-in.
Ends per beam	320	384
Yards per beam	25,000	50,000
Pounds per beam (net)	476	1,143
Yards per cheese	25,000	100,000
Beams per creel	1	2

Men from a second mill said they had gone to 56-in. warper beams as a

CONTINUED ON PAGE 133

Maintenance Tips for The Schweiter WINDER

The Schweiter automatic hollow-cop winder is a complicated piece of machinery. Sometimes problems arise that are not covered in the instruction manual. Here are the solutions to some of these problems. Topics discussed include—

Lubrication
Worm gears
Yarn-guide stroke
Friction disks
Soft cops
Scissors

By MAURICE D. CHANDLER

THE AVERAGE SUPERVISOR probably does not realize how complicated the maintenance of a Schweiter winder can be if the fixer does not thoroughly understand all its workings.

The operating manual covers the basic problems of maintenance; but there are factors not covered in the manual that can cause ends down, bad cops, and a decrease in machine efficiency.

Proper lubrication of the winder is essential. Among the parts frequently overlooked are the regulation screws (Catalog No. 13608). When atmospheric moisture causes rust to form on these screws, the pressure bolts (13616) become frozen and the disk-tension units do not function properly. Rust may form on the older-model machines at the rocking point of the lever (13470) around the bolt (13474) and impair the operation of the stop-motion mechanism.

These parts should be lubricated every two weeks with a lubricating compound containing graphite in colloidal solution, such as Lock-Ease. When the liquid carrier evaporates, a fine film of graphite remains on the treated parts. The same lubricant should be used once a week on the sliding rods (13300).

The cone (13452) and ball bearing in the sliding bracket (13321) should be taken apart, cleaned, and repacked when they start to warm up after operation.

Worm Gears Wear Out

Worm gears (13227 and 13150) tend to wear out too frequently when the machine is winding heavy cotton yarns. One reason for this trouble is incorrect adjustment of the length of the yarn-guide stroke. The instruction manual suggests several adjustments that can be used for different diameters of cops. However, these adjustments do not always prevent the worm gears from wearing unevenly. A longer yarn-guide stroke produces a harder cop and heavier gripping action of the yarn on the spindle. This action wears the worm gears.

Set Guide Stroke Close

The yarn-guide stroke should be set as short as possible within the limits of making a good cop. This adjustment can be made safely with the aid of an ammeter (one ampere per graduation) connected to the electric motor that drives the winder.

The first step is to set the yarn-guide stroke to the exact size of the cop to be wound. When the winder is started, the ammeter should record the normal amperage required by the motor. The reading should be made carefully; if the ammeter shows a gain of more than one ampere at the time of doffing, the yarn-guide stroke is too long and should be reduced until the reading is less than one ampere.

Shortening the yarn-guide stroke will tend to reduce the diameter and hardness of the cop. Therefore, readjustment of the thread guide (13385) may be necessary to compensate for the smaller diameter of the cop; a small weight added to the right side chain (13394) will compensate for the loss of hardness.

The yarn-guide stroke is ideally adjusted when the ammeter needle shows no deflection at the time of doffing. A reading should be made every day; and when discrepancies are observed, the spindle units should be stopped and adjusted. Such adjustments are not difficult to make.

When it is necessary to replace the friction disks, a little grease should be smeared on the protruding back part of the shaft (13170) so that the disks will not freeze to the shaft and make future adjustments difficult.

Worn friction disks are one of the chief causes of slippage of the driving wheel and consequent loss of speed. When these disks become worn or uneven, a distinctive sound is produced by the wobbling of the disk against the metal rim of the driving wheel. These disks should be checked frequently, along with the tension disks, to make sure that the parts are operating smoothly.

Use a Stroboscope

When speed of operation drops, make readings with a stroboscopic light of (1) the driving friction wheel, (2) the friction disk, and (3) the spindle.

The reading at the friction wheel and the disk is made so that the speeds of the different winding heads may be compared. If the reading between the friction disk and the spindle shows a difference of more than 1%, the clutch spacers (13162 and 13163) should be adjusted by turning the nuts (13191) three or four turns clockwise.

This adjustment must be made very carefully. Too many turns of the nuts will cause the spindle to continue to revolve when doffing takes place. If the spindle continues to turn, the condition can usually be adjusted by moving the friction disk slightly away from the driving wheel. This operation may save reopening the spindle

cover (13340) a second time for readjustment.

Scissors Fail To Cut

Sometimes the yarn is not cut by the scissors when doffing takes place; the yarn may wrap itself around the counter piece as the new winding cycle starts. The trouble is often traced to an accumulation of fuzz in front of the rubber buffer that causes the counter piece to come to rest too far forward. To correct, clean the buffer and readjust the ring if necessary.

When the scissors cut the yarn prematurely, the short contact wire (13276) should be moved forward. Often it is necessary to adjust the long wire (13275) at the same time.

If the scissors move at the wrong time, before the spindle is retracted for doffing, the pawl (13028) or the cam-shaft starting lever (13086) may be worn out. Another cause of this trouble is the chain (13418) getting out of line.

Replacement of the pawl and cam-shaft starting lever require several hours of tedious mechanical work. Therefore, it is important to investigate the chain first; this operation requires only half an hour.

Chain Rubs Lever

If the chain is not exactly centered between the side walls of the lever (13422), the links may rub and cause the lever to move prematurely. When this action takes place, the main-shaft unit becomes engaged and causes faulty timing.

The chain can be accurately centered by inserting a few spacing washers between the covers (13416) and the ball bearings located at the extremities of the shaft (13410). The spacing washers should have an inside diameter large enough to permit the middle core of the ball bearings to rotate freely.

Disk Causes Soft Cops

Soft cops may be caused by yarn slipping out of the tension disk nearest the porcelain eye (13610). The trouble can be corrected by installing a larger disk.

Tensions of 1.75 to 2 lbs. normally produce good cops from 8s yarn. However, if a harder cop is desired, remove plate (13620) from the three-disk tension unit and bend the three edges slightly. Let out the regulation screw (13608) to its full length and reassemble the unit. This procedure is preferable to adding more weight to the counter piece. Too much weight will break or loosen the links of the chain (13394) and cause the chain to fall out of the roller (13392).

Modify Usual Methods To Bleach COTTON-NYLON Blends

• To produce good whites on cotton-nylon blends, it is necessary to modify bleaching methods that are satisfactory on all-cotton fabrics. The three methods presented here have given good results on various cotton-nylon blends.

COTTON-NYLON BLENDS can be bleached by the Textone method, the continuous hydrogen-peroxide method, or by sodium hypochlorite or hydrogen peroxide in a kier. It is advisable to make trial runs in starting up to make sure that the method chosen is suitable for the fabric and conditions that exist in any particular mill.

Textone Method

If the cotton is reasonably clean and free from motes, a scour based on the following recommendations is suggested:

2% Duponol D paste
2% soap
2% TSP (trisodium phosphate)
Scour for 1 hr. at 180 to 212° F.

If the cotton is dirty or contains motes, use about 5% caustic soda instead of TSP and increase the scouring time.

Fabrics that contain more than 50% nylon usually require a heat-setting treatment at 400 to 420° F. for 10 to 20 secs. The treatment usually yellows the nylon, and neither sodium hypochlorite nor hydrogen peroxide will produce a satisfactory bleach. Textone must be used on such fabrics.

After scouring and heat-setting, bleach the fabric as follows:

1.5 grams per liter Textone
1.5 gpl. glacial acetic acid

Work the goods 1 hr. at 190 to 212° F.

Textone contains sodium chlorite, a vigorous oxidizing agent, and manufacturers' recommendations should be followed in handling it.

Continuous Hydrogen-Peroxide Bleach

Cotton-nylon blends containing up to 20% nylon can be bleached in continuous range under the following conditions:

The goods are saturated to 100% pickup with 3.2% caustic soda and stored in a J-box for 1 hr. at 205 to 210° F. They are then washed out in the normal manner.

The goods are then saturated to 100% pickup in a solution containing 15 lbs. 35-vol. Albone per 100 gals. and 17 lbs of sodium silicate per 100 gals. (Grasselli #30, 42° Bé.) and stored in a J-box for 1 hr. at 205 to 210° F.

The presence of the cotton inhibits the action of the peroxide on the nylon; but because peroxide used in this way can damage nylon, mills should determine if the continuous method outlined is applicable to their fabric and conditions.

Kier Bleaching

A standard caustic boil-off for cotton is satisfactory for cotton-nylon blends if the liquor does not become highly colored. The addition of 2% of sodium hydrosulfite before the boil is begun will prevent staining the nylon and help bleach the cotton.

In a trial run, the scoured fabric was padded in a 1% available-chlorine solution of sodium hypochlorite containing 0.2% excess alkali. The goods were let stand 4 hrs. Nylon strength loss was 6%.

Hydrogen Peroxide

A modified hydrogen-peroxide bleach will also give a fairly good white on cotton-nylon blends. The scoured fabric is worked in:

0.1% Albone 35
0.3 to 0.6% sodium silicate (Grasselli #30 grade)

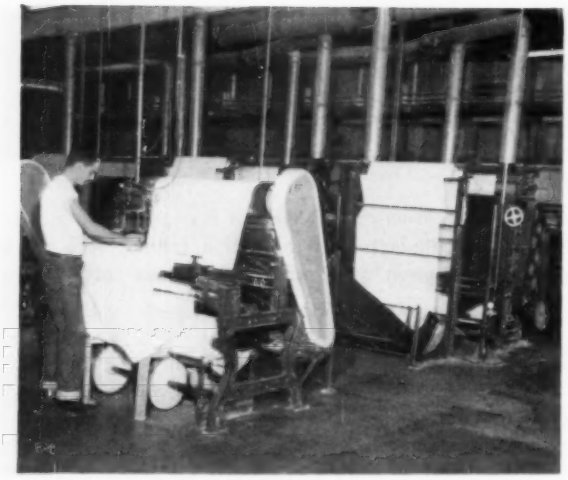
Work for 5 hrs. at 140° F.

Peroxide is lost through catalytic degradation and may have to be replaced to maintain the original concentration.

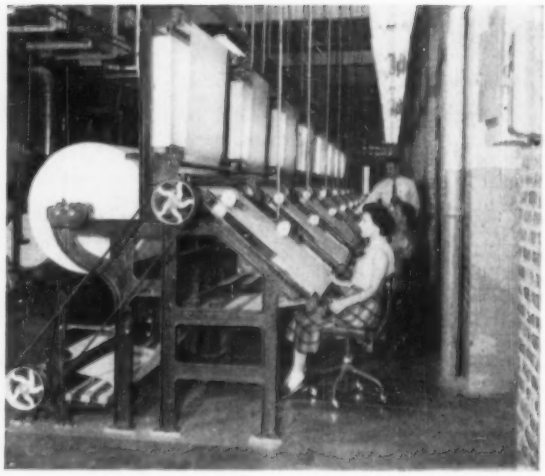
This bleach causes a strength loss in the nylon of 10% or less. Higher temperatures, peroxide concentrations, or pH values will increase strength losses.

Fabrics can be blued after bleaching. In blends containing a high percentage of nylon, it may be necessary to tint the nylon with dyes such as Celanthrene Violet CD.

From Nylon Preliminary Bulletin N-23, E. I. du Pont de Nemours & Co., Inc.



FIVE RANGES of brushing and shearing machines process cloth from a total of 1,868 looms.

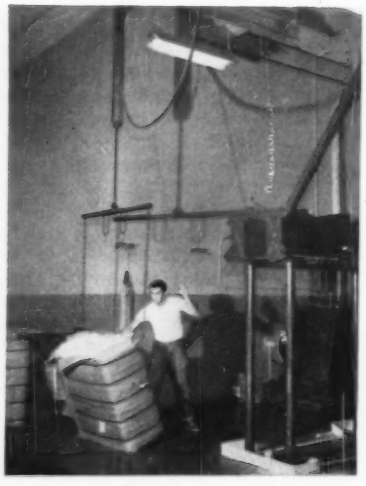


INSPECTING MACHINES are used to inspect cloth when inspecting and grading must be exact.

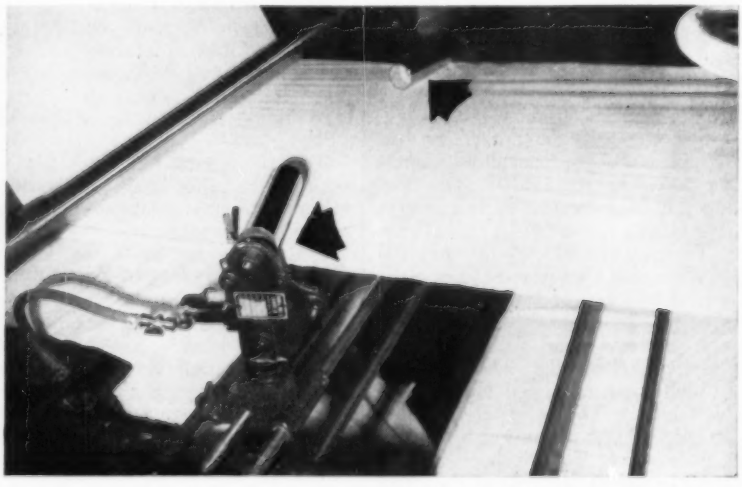
CLOTH ROOM?
Here's One of the Best

- New machinery has just been added to complete this cloth room built in 1953. With no major machine over three years old, modern methods are used for high production.
- Here's how Clinton Cotton Mills handles the new equipment.

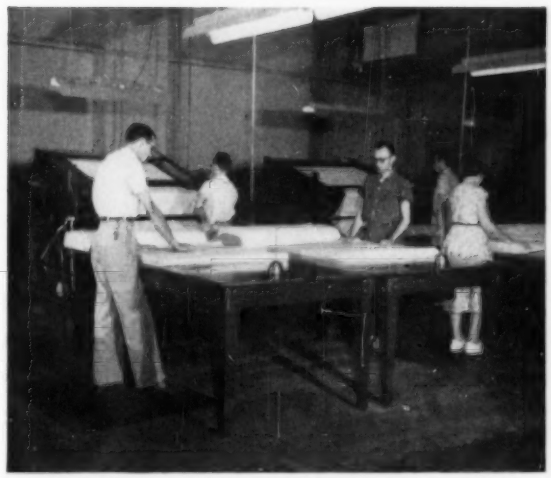
By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD



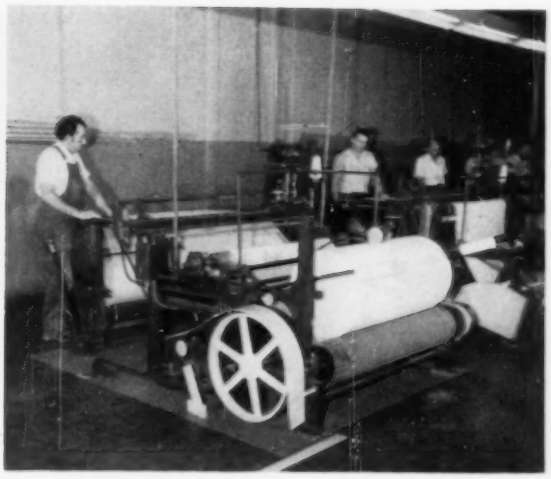
LIFTING DEVICE, homemade and operated by air, aids in handling cloth during baling.



AIR GUIDES (arrows) at each brushing machine keep cloth straight at 120 yds. per min.



EIGHT FOLDERS are used. Final cloth grading on flat tables follows the folding process.



FIVE INSPECTING and rolling machines are used to process cheesecloth and other light cloth.

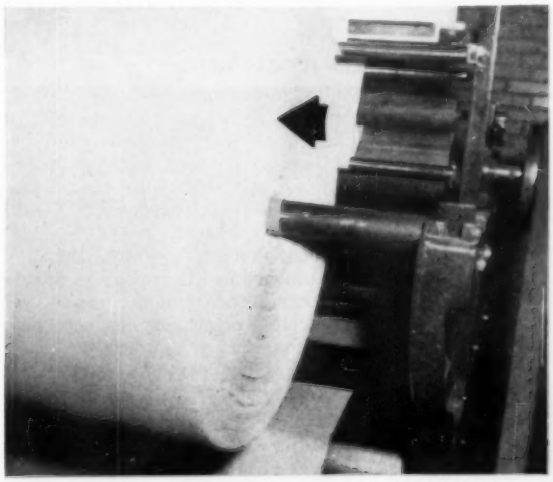
CLINTON COTTON MILLS, Clinton, S. C., is rounding out the cloth-room machinery for its cloth room built in 1953. At that time, a new weave room had just been completed. Other recent increases in the number of looms have called for more cloth-room equipment.

Cotton fabrics woven at Clinton include print cloth, cheesecloth, broadcloths, and twills. Cloth constructions include 100x50, 80x56, 80-square, and others. Filling yarns range between 34s and 42.5s. Many warp yarns are 31½s. Cloth production the week this article was written was 1,394,000 yds. from 1,868 looms. Weave-room production in actual picks was 97%.

The cloth-room building is located between the two largest weave rooms at Clinton; so cloth has to be hauled only a short distance. The cloth is doffed at the looms in 400- to 500-yd. rolls.

The processing equipment in the cloth room begins at five Curtis & Marble shearing-brushing-machine ranges. Here the cloth is sewed into approximately 3,000-yd. rolls with Singer railway sewing machines. A scray at each range is equipped with a tension bar and Micro switch. The switch stops the scray when the cloth from a loom roll is run off, but the range continues to run the cloth built up in the scray. The end of the cloth stops in a position to be sewed easily.

Cloth is guided from the scray into the brushing machine with air guides manufactured by Guider Roll & Service Co. Consequently the cloth edges go into the brushing machine and come out of the shearing machine in a uniform line. The range operates at 120 yds. per min.



STRAIGHT SELVAGES (arrow) on the cloth at inspecting machines result from the air guide.

Inspecting on Machines

Several styles of cloth are inspected over lights on Curtis & Marble inspecting machines. The styles of cloth include 80-square, broadcloth, and other fabrics where inspecting requirements are very exact.

A 3,000-yd. roll of cloth from a brushing-shearing range is mounted on the back of an inspecting machine. The large rolls of cloth are moved with a monorail system. The cloth goes up over a vertical fluorescent-lighted glass box and down over an inclined boarded area at the front of the machine. A woman inspector-grader sits at the front of each machine and inspects the cloth as it goes over the light. Then small defects such as slubs and jerk-backs are burled at the inclined surface.

Cloth is also graded at the inspecting machines by the point system. Major defects are tagged with sewed-in strings. The cloth is cut at these defects later in final grading.

Two counters are used on the inspecting machines. One counter records the total number of yards inspected each day. The other is used to count the yards of cloth between each defect in single weave-room rolls. The machines run at 48 yds. per min. Production is 9,000 yds. per inspector-grader each 8-hr. shift.

Grading Is Double-Checked

Cloth from the inspecting frame is moved to Curtis & Marble folders still in the 3,000-yd. rolls. The cloth is folded and cut at the 400- to 500-yd. loom-roll lengths, or as specified by each customer. The folder runs at 128 yds. per min. About 40,000 yds. are folded on each machine in an 8-hr. day.

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BLENDING HOPPERS have been placed in front of the bale breakers. Feeding is from 62 bales of 1-1/16-in. cotton.

Chiquola Tightens Up on CARDING

Carding practices and equipment are undergoing change at Chiquola Mfg. Co., Honea Path, S. C. To bring them up to date, the mill is—

- **Changing from lap-back to can-back drawing**
- **Installing two-process drawing for filling**
- **Converting roving frames to larger packages**

By WILLIAM G. ASHMORE, Associate Editor, TEXTILE WORLD

YARN QUALITY is being substantially improved at Chiquola by a reorganization of some of the carding operations and a tightening up of others. Most of the machinery changes made so far were at the drawing operation, where lap-back drawing is still being replaced with can-back drawing.

Where the change has already been made, drawing-sliver doublings were decreased for the 31s warp yarn and increased for the 42s filling yarn, and total draft was cut 50%. The immediate result was a sharp increase in sliver evenness.

Here's how Chiquola operates from opening through roving and how the machinery is being modified in various departments.

In the Opener Room—

Cotton used is carefully selected 1 1/16-in. Strict Low Middling with a Micronaire reading of 4.0 to 4.5. Over 70% of the fiber comes from the Memphis area; the remainder is from irrigated areas. In the opening room, 124 bales are laid down; feeding is from 62 bales.

Chiquola uses two lines of opening equipment, each fed by five blending hoppers in front of the bale breakers. The breakers are followed by a two-section upstroke cleaner and a Centrif-Air cleaner.

All the equipment except the Centrif-Air cleaner is Whitin. Total production from the two lines is about 1,600 lbs. per hr.

Two pneumatic-feed pipes from the opening rooms converge into a single pipe that transports the cotton several hundred feet across the yard of the mill into the picker room, which is located in the mill proper.

About halfway between the two departments an Eriez magnetic hump has been installed in the pipe. Two nonelectric permanent magnets pick up tramp metal without interfering with the flow of the cotton. This device is said to have reduced fires from an average of one a month to none at all. Since installation of the magnets, damage to pickers from stray bits of metal has become negligible.

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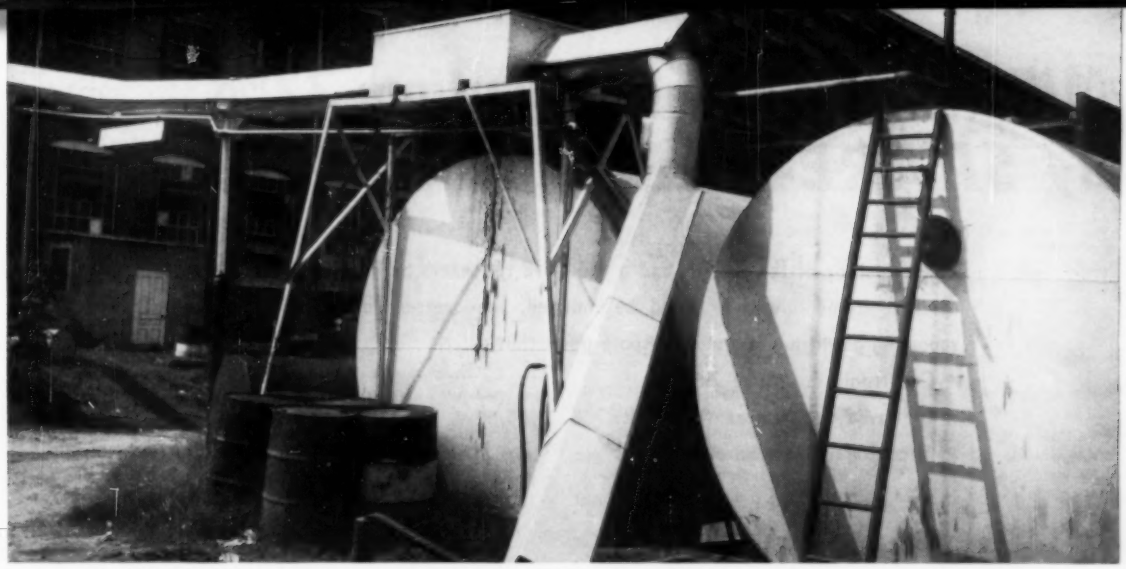


A HUMP MAGNET in the delivery pipe has practically eliminated fires in the picker room and damage from tramp metal.

DRAWING is being converted from lap-back to can-back. A 62-grain sliver is produced for both warp and filling yarns.

TWO-PROCESS ROVING is being converted from 9x4½ to 10x5 to produce a 26-oz. bobbin.

Mill Cuts Spinning Downtime 22% By SPARE-PARTS HANDLING

When a study of the records and a talk with the fixers and second hands indicated spinning-frame downtime could be reduced, the overseer developed a system of reporting downtime and storing spare parts that—

- **Cut frame downtime 22%**
- **Improved department teamwork**
- **Encouraged more-careful repairs**

By C. M. BOWDEN

A SOUTHERN COTTON MILL is saving $6,800 annually after reducing downtime on its spinning frames. The overseer, who initiated the reduction, made use of the facts at hand and developed a successful system for reporting downtime and storing spare parts.

He naturally expected that there would be downtime. Normal wear and tear breaks frames down. However, when the mill paid for unnecessary downtime, it was lost time. Lost time was the problem this overseer tackled.

Showing Up Lost Time

The overseer was confronted immediately with a pair of problems: (1) how could he indicate unnecessary downtime, and (2) how could he sell the personnel on a system of control? There was a difficult hurdle: top management did not give supervisors the full story on the actual cost of downtime.

Although there were no concrete statistics to present to the fixers, section men, and second hands, the overseer had adequate ammunition at hand. For example, the 100,000-spindle spinning department had an average of 46 frame-hours of downtime per week. Under the old downtime-control system, the overseer kept a detailed record of reports from all shift foremen. Each report showed the frame number, duration of downtime, and cause of breakdown.

The overseer noted one example of excessive downtime that kept recurring on his report: sometimes a frame was out of use for as much as 3 hrs. waiting for minor repairs. Investigation revealed that either the section man didn't have the right part of the particular frame model, or he couldn't find the part in the storage cabinets. He then had to get an order from the second hand and have the part made in the shop. Result: instead of several minutes' downtime, the frame was idle for 3 hrs.

The overseer also noted that these delays happened on the night shifts. From 5 p.m. to 8 a.m., the machine shop had only a skeleton crew. Also, there was less personnel available for making repairs during these hours. Here, at last, was a definite clue to the downtime problem.

As a beginning, the supervisor revised his report system. Under the new system, it was necessary to report the cause and time of unexpected delays.

Variety of Frame Models Causes Spare-Part Problem

Spinning frames at the mill consisted of several different models, some new, some old, and some rebuilt with a variety of draft assemblies. These frames spun 30 different yarn numbers with a variety of twists. Such a department required many different types and sizes of spare parts to keep the frames running.

The overseer made a survey of the downtime causes on a particular frame and discovered the following:

1. An inventory of spare parts in the storage cabinets listed seven jack gears and studs that were required for repairing the given frame. But the second hands reported that these parts were so mixed up with less-vital parts that the section man could easily have spent an additional 3 hrs. hunting for these seven parts. It was obvious that the storage system for spare parts needed a thorough overhauling to speed this operation.
2. Fixers inventoried the spare parts in their tool boxes. Three studs were listed, as well as other vital parts. Here was another cause of unnecessary downtime.
3. A talk with the second hands revealed that management expected too much from a system that could not work under practical operating conditions. For self-preservation, the second hands had taken matters into their own hands. Because they knew the storage facilities were poorly designed and maintained, they picked up every spare part not nailed down and hoarded them in the tool box. This stopgap measure was effective for a short time; but because it was impossible for fixers to keep a full supply of vital parts in their tool boxes, everyone began to suffer from this practice.

The Answer: Nest-Egg Storage

The overseer realized that the responsibility for storage conditions fell to management. He then devised what he called "nest-egg storage" for the vital frame parts. He built the storage units in the shape of a spinning-frame head. Gears were stored in their regular working places. A nest-egg unit was built for each model of frame; each had a capacity for six sets of gears and studs and all components of the drive from the cylinder gear to the back-roll gear.

Each unit front has a glass door and a lock. At a glance, it can easily be seen if all main drive components are on hand.

A feature of this storage is the extra space available for parts not included in the frame head because only one-

SMITH MILLS

Downtime Report — Dept: Spinning
Shift: Second — Date: 6-21-55

Frame #	Cause	Time	Remarks
21	Jack Gear & Stud Replaced	3 Hrs.	Shop Making Stud

OLD REPORT did not show up unnecessary delays during downtime. Here, for example, a jack gear and stud were replaced on the night shift. The downtime shown on the report is 3 hrs.; however, most of this time involved a fruitless search for a stud in the spinning department and a subsequent visit to the shop.

SMITH MILLS

Downtime Report — Dept: Spinning
Shift: Second — B — Date: 6-21-55

Frame #	Cause	Other Delay	Time Other Delay	Total Downtime
21	Jack Gear & Stud Replaced	No Stud—Shop Making	2 Hrs.	3 Hrs.

NEW REPORT shows up the unnecessary delay by giving the cause and the time. With this information, the overseer knew a sizable percentage of downtime was coming from: (1) poor spare-part storage, (2) idle frames while fixers hunted for parts, and (3) idle frame while part was being made.

half the cabinet is required to store six sets of necessary parts. Miscellaneous parts such as cradles, pins, drafting assemblies, Pitman rolls, and builder parts go into the rest of the space.

Only the second hand has a key to the units, which are used only when supplies are not available from regular storage cabinets. Second hands permit the use of these supplies when unnecessary downtime might be caused by these conditions:

1. Hunting for spare parts
2. Letting frame remain idle while trip to supply room is made
3. Frame idle while trip to shop is made
4. When part is not immediately available from regular storage.

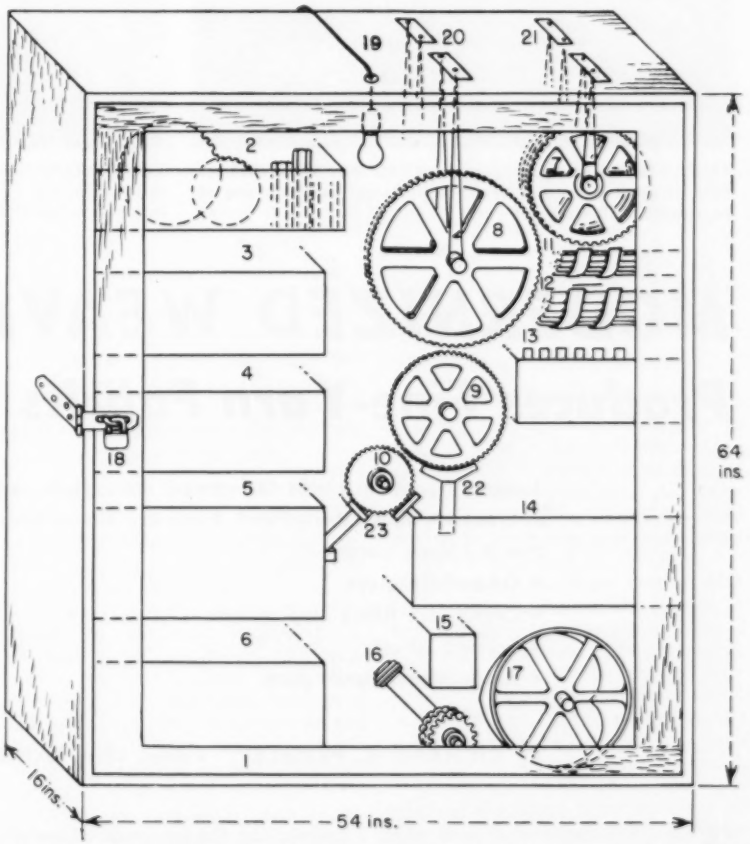
The second hand now reports the use of nest-egg supplies to the overseer and orders replacements from the main supply room, parts manufacturers, or machine shop.

As the new system was being used, it was found that regular storage cabinets could be devoted to draft and twist change gears, along with miscellaneous supplies and parts. Nest-egg storage still retained its main function of providing a completely visible, controllable supply of vital drive parts.

System Saves $131 per Week

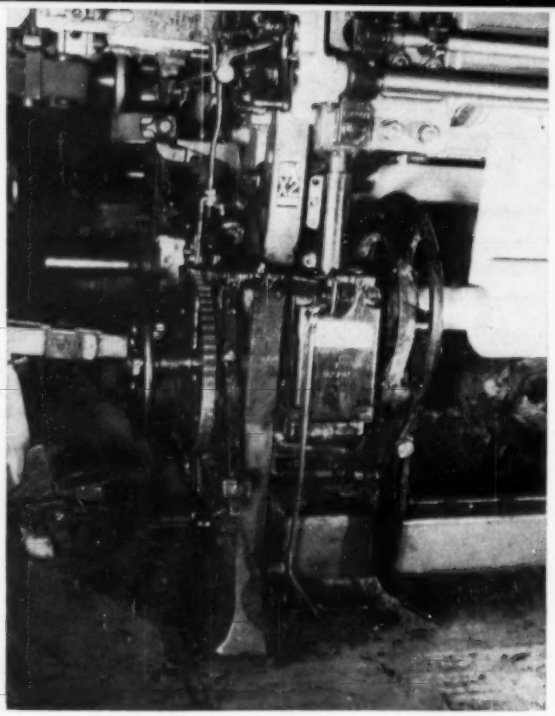
The new system reduced average downtime in the spinning room from 46 frame-hours to 36 frame-hours per week, a 22% cut. Dollar value of the yarn lost in 10 hrs. was $131.40.

The overseer made no effort to speed up the actual repair time of the fixers. Through better control and storage, he concentrated on giving every possible assistance to section men and fixers. He believes that management has done its best to solve the downtime problem.

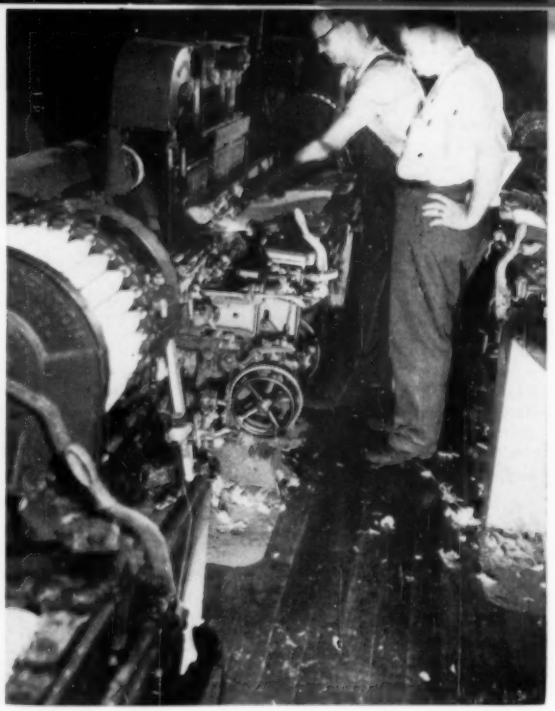


NEW STORAGE SYSTEM is called "nest-egg" storage. Vital parts are completely visible in a cabinet show case. Built by the shop, the cabinet is constructed like a spinning-frame head. Parts are made visible by an electric-light bulb. Extra space is used for drafting assemblies and other parts not included in frame heads.

Here's the key to the numbers in the illustration: 1, glass panel in door; 2, drafting assemblies from crown gear to back-roll gear; 3, 4, 5, and 6, trough-like shelves for miscellaneous storage such as long-draft cradles, pins, top rolls, and skewers; 7, six front-roll gears suspended on a wooden stud (cut from a broom handle, which is held by two wires mounted in the top of the nest-egg cabinet; 8, six intermediate gears similarly suspended; 9, six jack gears mounted on a wooden stud fastened to the back of the cabinet and resting on wooden block 22; 10, six cylinder gears mounted like the jack gears and resting on wooden block 23; 11, 12, and 13, studs for 8, 9, and 10; 14, bearings for head ends; 15, small builder parts such as Pitman rolls; 16, extra sprockets and shaft for builder drive; 17, extra gear and cam for builder motion; 18, lock on door; 19, extension light and cord.



TAKE-UP GEARS are enclosed in an oil bath. The device eliminates about 15 gears used in the conventional take-up. The entire unit can be replaced in 10 mins.



CLOSE CHECKING between second hands and loomfixers insures first-quality chambray. Here, the second hand is Cleo Lewis and the loomfixer is Paul McCall.

MODERNIZED WEAVE ROOM

Produces Fine-Yarn Fabrics

Jumping from print cloths to fine-yarn dress goods and shirtings was a big switch at Woodside Mills' Liberty Plant. A new weave room was added as part of the change. New X-2 looms feature—

- **Oil-bath take-ups**
- **Center-fork filling stop motions**
- **Bartlett let-offs**
- **Antifriction whiproll parts**

By RICHARD B. PRESSLEY, Associate Editor, TEXTILE WORLD

THE QUESTION of what to do when the market bogs down on the cloth you're weaving has been answered at Woodside Mills', Liberty, S. C., Plant. The fabric woven up to 2½ years ago was print cloth; now, production is concentrated on fine-yarn-number combed-cotton dress goods and shirtings. Many colors of warp stripes and solid warp colors are woven. Chambray is the basic weave and, of course, all filling is gray yarn.

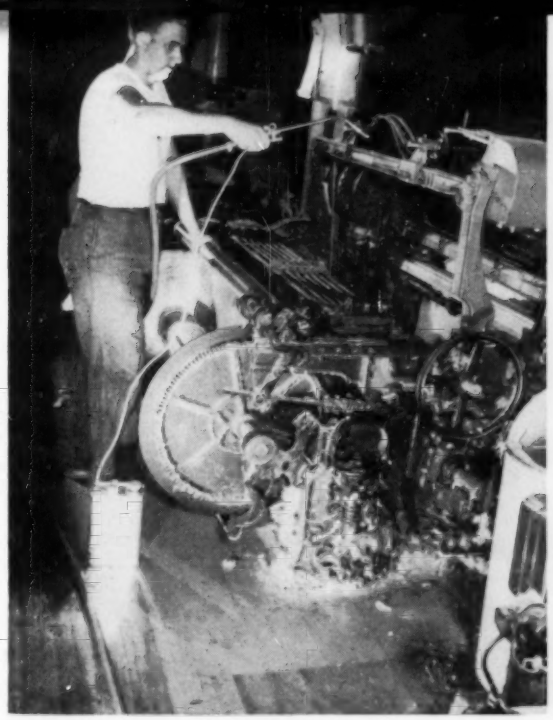
The change to the fine-yarn fabrics involved installing new machinery and modernizing the equipment throughout the mill. In weaving, the change involved:

1. Modernizing the existing looms and putting them into good mechanical condition
2. Installing evaporated-water air-changing equipment in three weave rooms
3. Adding a MonoRail system for beam handling and automatic loom cleaning in one weave room
4. Building a new weave room and installing 225 additional looms

New Looms Produce Chambray

The new looms were necessary to produce the same yardage of cloth on the new fine-yarn fabrics that was woven on the old coarser goods. The pickage on the print cloth was fairly light; the chambrays now woven range in the neighborhood of 60 to 76 ppi. Combed-cotton warp yarns are 40s to 60s; combed filling yarns are 40s to 60s.

The new weave room contains 194 X-2 looms and several E-model looms.



LOOM CLEANING is quick. Leon Crawford is using a spray gun and chemical solution to spray the entire loom. Then he will blow the loom off with compressed air.

BATTERY CARTS are used by batteryhands to fill batteries. Dorothy Stevens transfers a basket of filling to her cart from a storage stand located at a central position in the weave room.

The X-2 looms are 46 ins. wide and run at 188 ppm.

All the X-2 looms have the new take-up-gear assembly enclosed in an oil bath. This new device has only about one-fourth the number of gears used in the conventional X-2 take-up.

The take-up also has other advantages:

1. Even on the fine-yarn cloth woven, there's no slippage when cloth is doffed without stopping the looms.

2. Larger rolls of cloth can be woven because the cloth-roll clutch is located about halfway between the take-up roll and the front lengthwise girder of the loom.

3. No lubrication is necessary since the take-up gears are enclosed in the oil bath.

4. The silk-type pick wheel has a handwheel for easy adjustment at pick-outs. All gears in the take-up form a direct drive; and when the weaver turns the handwheel back, the letting-back motion is positive.

5. Two rolls at the back of the metallized take-up roll eliminate beat-back and insure correct taking up. The top back roll is covered with rubber; the bottom back roll is covered with felt.

6. Cloth rolls are metal tubes and, therefore, are not easily damaged. Since the rolls do not splinter, cloth damage is also prevented.

7. Maintenance is eliminated, and consequently loom production is increased. The take-up unit is a totally enclosed self-contained unit. When a unit fails, the loomfixer removes it and puts in a spare unit. This job requires only about 10 mins. Damaged units are repaired by a stockman in the mill supply room and are held in the supply room as spares.

Features for Quality Cloth

Several other loom features were selected by Woodside Mills' management men to improve the quality of the fine-yarn chambray.

Center-fork filling stop motions do much to eliminate broken picks. Bartlett let-offs help insure cloth evenness. Whiprolls have antifriction bearings. The yarn-beam diameter is 26 ins., and the yarn-beam-journal diameter is 1¼ ins. Six-bank electric warp stop motions are used for quick stoppage at warp-end breaks.

Other optional loom parts or accessories are Veeder-Root 2-3-4 pick counters, aluminum lays, endless checkstraps, Draper-Diehl drives, and clock-spring-top harness motions.

Loomfixers were trained by a combination of several methods. First, they were instructed by an erector from Draper Corp. Then they attended two sessions of the State Vocational School. And finally, they were given individual instructions by experienced second hands moved from another weave room at the Liberty mill equipped with older X-2 looms.

The looms are lubricated on the first shift only by a regular oiler. He oils and greases the looms by a regular schedule.

Loom Cleaning Is Fast

Looms are cleaned thoroughly at warp-outs by a loom cleaner. One loom cleaner is employed on each of the three shifts operated. All warps are cut out or the patterns are lifted out when they run out, and drawn warps are tied back in the loom.

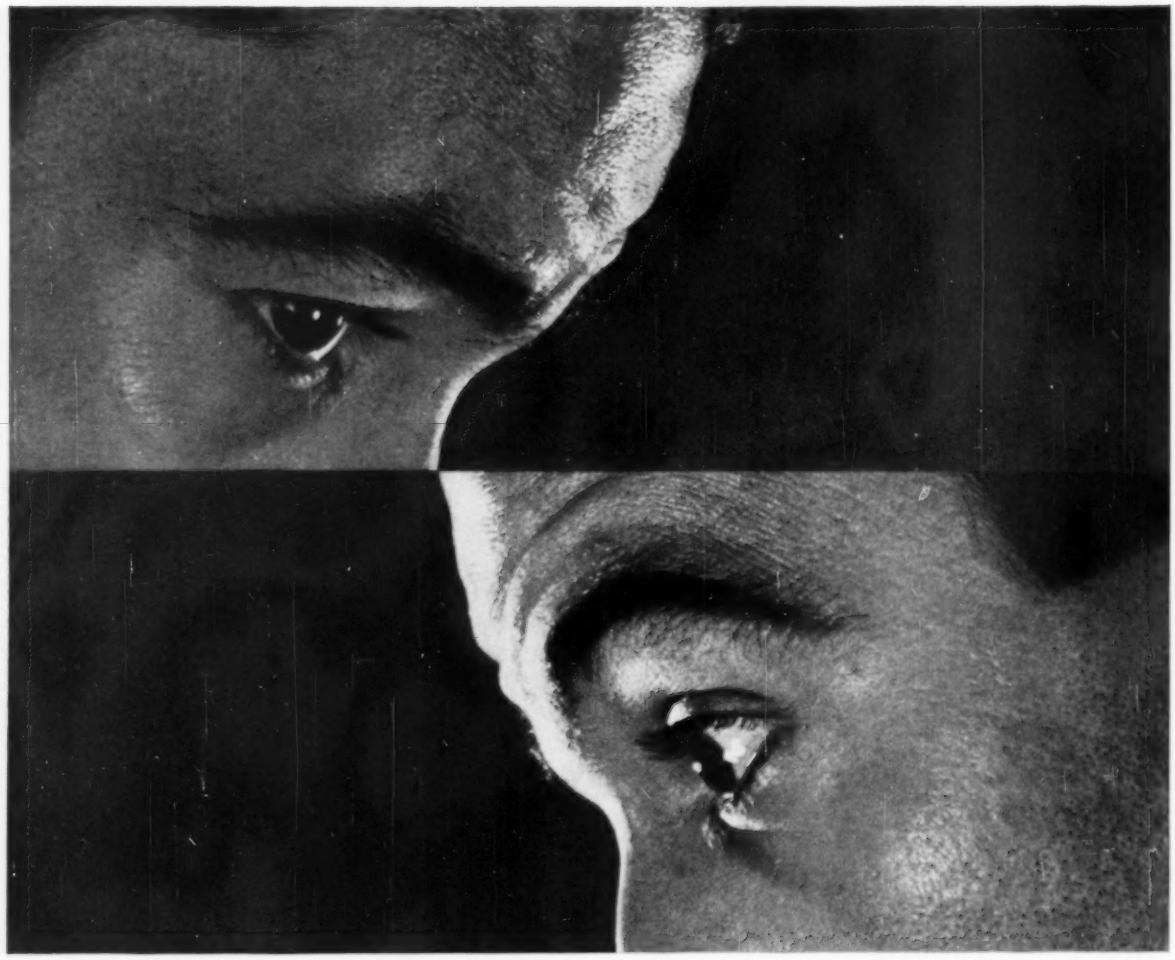
The empty looms are sprayed with Immunol. To spray the looms, a trigger-controlled spray gun is screwed into a fitting on the end of a rubber hose connected to the regular compressed-air supply in the weave room. A flexible metal tube fastened to the spray-gun spout is inserted in a hole in a 1-gal. can containing the Immunol.

The loom cleaner sprays the solution on the loom from the arch all the way to the floor. Then he removes the spray gun from the air hose and blows off the loom from the top down with compressed air. No rags or brushes are used, and no manual scrubbing is done. The loom cleaner removes the blown-off lint from the floor, and the job is completed.

Since looms are cleaned often, the spray-cleaning method does a good job and looms are always fairly clean. There's no caked lint and oil on them.

Floors are hardwood. The floor

CONTINUED ON PAGE 133



Let's take a second look at "seconds"

There's probably more second-guessing about "seconds", than on any other industry problem. Everyone is a Monday morning quarterback ...and it's the millman who takes the rap. Every time.

But no millman can turn out consistently first quality goods with a yarn that readily develops puff balls, breaks and knots or has a fixation for uneven dyeing.

For the record... IRC's Continuous Process Rayon yarn has a consistent record for cutting down seconds and increasing mill efficiency. It's the yarn that's specified for "critical" fabrics in most important mills.

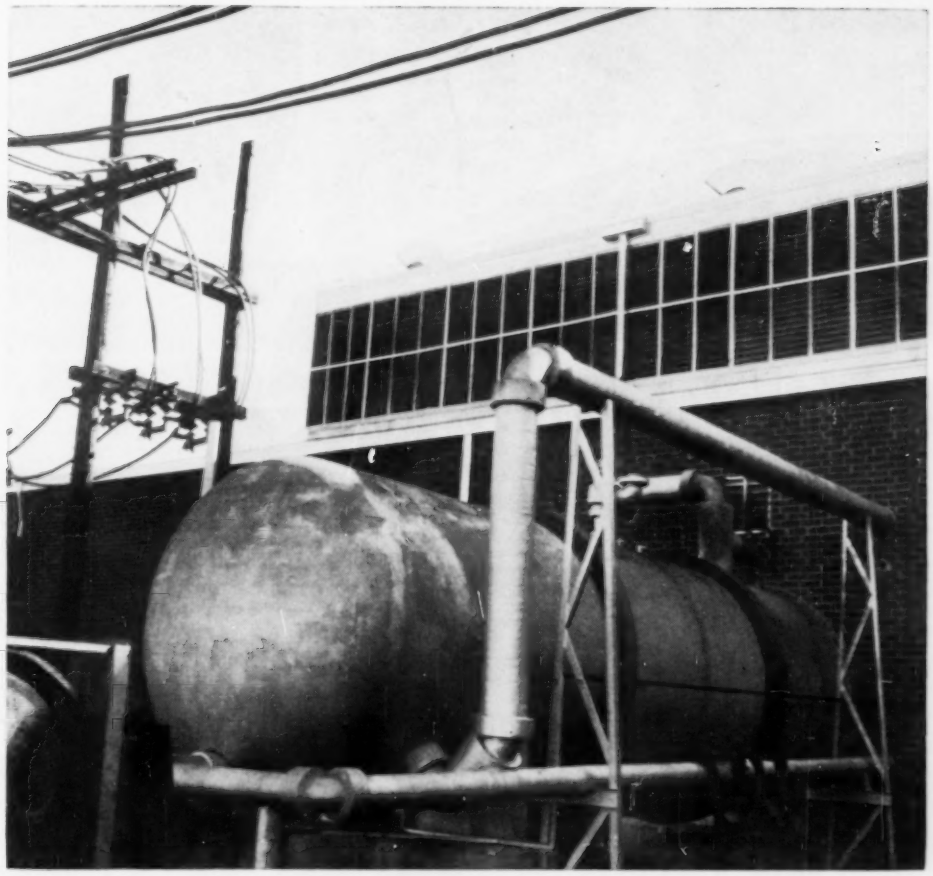
When your cost per yard of first quality goods is upped by the number of "seconds" ...it just seems to make good sense to put all of your fabrics on the "critical" list.

I·R·C

INDUSTRIAL RAYON CORPORATION
CLEVELAND, OHIO

Producers of Continuous Process Rayon Yarns, Tyron® Cord for Tires, New Nylon Staple. Sales Office: 500 Fifth Avenue, New York 36, N. Y.

For more information, write direct or use Reader-Service post card.



YARN DRYER (on roof) and steamer (in yard) were located outside to save floor space. The carpet dryer is also mounted on the roof in a similar enclosure. Heat from these units does not affect mill temperatures.

Problem—More Floor Space Solution—Use the Roof

When Alexander Smith, Inc., decided to make carpets at Liberty, S. C., the plant it selected was new but not designed for carpet operations. To get needed floor space, the mill located two dryers on the roof and pushed 85% of the yarn steamer out into the mill yard.

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

BY LOCATING a yarn dryer and a carpet dryer on the roof, Alexander Smith, Inc., made several hundred square feet of floor space available at its Liberty, S. C., plant. Then the yarn steamer was installed so that most of it extends into the mill yard, and still more working area was released.

Utilization of roof and yard areas provides another advantage in this modern air-conditioned plant. All the heat normally radiated from these big installations goes outside and doesn't add to the load of the air-conditioning apparatus. Working conditions are much more pleasant as a result.

The mill was originally built for the Julius Kayser Co. as a knitting plant but was never occupied for that purpose. When Alexander Smith came in, fitting the large looms, dryers, and steamer into areas not originally laid out for such equipment was a problem.

The flat-roof construction of the one-story plant offered a solution.

CONTINUED ON PAGE 190

SOLVAY'S 75th YEAR

As America's pioneer producer of alkalies, we are proud of the contributions Solvay has made to the dynamic growth of American Industry during the past 75 years.

It is natural to look at our 75th year as a mark of achievement.

Be assured that in the years of industrial development ahead Solvay products and service will continue to set the pace of leadership.

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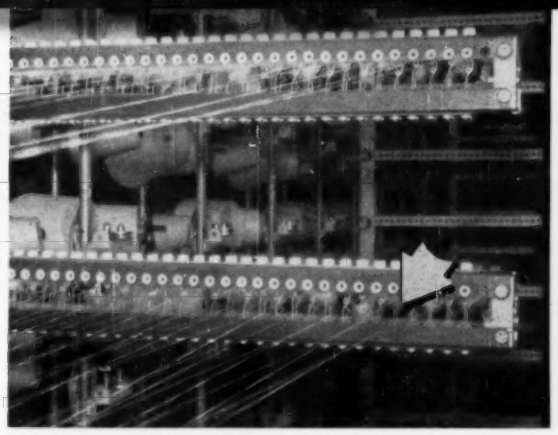
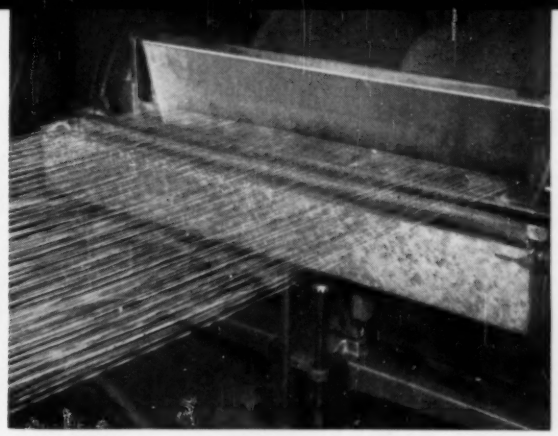


LINT (arrow) readily collects on stop motions, eyelets, and tension plates and must be constantly removed to prevent being carried into the yarn.



OIL TROUGH with a felt pad can be used to lubricate the yarn for experiments. From 1 to 2% stainless low-viscosity oil that is easily removed is used.

To Knit COTTON TRICOT—

- For glove, dress, sportshirt, and underwear fabrics—
- Increase yarn balloon to 12 ins.
- Build short warps
- Apply 1 to 2% oil
- Reset guides higher and further left

By **FREDERICK SCHMIDT,** Regent Knitting Mills Ltd.

More than 90% of the tricot machines in the U. S. are 28-gauge; and these machines can produce a variety of cotton fabrics for gloves, sport-shirts, dresses, and underwear. The fabric range, however, is limited by the yarn properties.

For instance, a permanent-tuck fabric cannot be made from cotton yarn because the elastic recovery of American Middling cotton is only 6 to 8% compared to 30% for nylon. Plain jersey fabrics are unsatisfactory because of the irregularity and unevenness of the cotton yarn, which results in a shaded fabric. Atlas laps should be used to obtain even and regular fabric.

Yarn sizes for 28-gauge machines range from 32/1 to 100/1 depending on the required strength, weight, and hand of the fabric. For yarns up to 60/1, a good American cotton will knit satisfactorily. For finer yarns, only the better Egyptian varieties will guarantee trouble-free knitting.

The yarns must be combed and have a long, fine staple. Although the yarns may or may not be mercerized, they should be even, free of slubs and dirt, steamed, and waxed.

A singles yarn is preferable with a twist of 29 tpi. Singeing will help to reduce undesirable lint.

Indirect Warping Is Best

For high-quality goods, such as glove fabrics, the indirect system of warping gives the best results. High-speed direct warping is more economical for knitting sportshirts, dress, and underwear fabrics.

To change your creel from nylon or rayon to cotton, make these adjustments:

Increase the distance between the cone and the first eyelet on the creel to about 12 ins. to get a large thread balloon. This balloon decreases the thread drag against the cone and reduces tension.

Adjust the yarn tension to 6 to 8 grams for yarns up to 70s and to 4 to 6 grams for finer yarns.

Adjust the speed of the warper to 100 to 300 yds. per min. The exact speed will depend on the yarn quality.

Higher speeds than 300 yds. per min. are not recommended because excess tension may lead to thread damage and result in end breaks on the knitting machine. Slow speeds also allow the operator to spot big knots and slubs and stop the warper to remove the faults.

The length of the warp will depend on the yarn quality. A cheap yarn tends to develop heavy lint on the knitting machine in a short time. This lint can only be removed completely from an empty machine. Short warps provide more opportunities to clean the machine.

An 80/1 high-quality yarn warped with 580 ends per section to a length of 4,000 yds. can be worked off to the last piece without excessive lint accumulations.

Keep the tension plates, eyelets, stop motions, and reed free from lint, which develops at a fast rate. The lint may block the smooth passage of the yarn or it may be carried into the warp.

Soften and strengthen the yarn with oil to give better knitting performance. The efficiency is increased up to 30% because the threads become more flexible and the protruding fibers are smoothed down.

Yarn oiling can be done during warping with a mechanical oiling device. These devices usually supply up to 4% oil to the yarn, but 1 to 2% is sufficient for cotton yarns.

The oil should be of low viscosity, stainless, and easily removable. Run the warp over a felt pad placed in a trough for experimental work.

CONTINUED ON PAGE 190

NOW— NEMA Type XII

THE ONLY SAFETY SWITCH IN SPECIAL INDUSTRY ENCLOSURE!

CAPTIVE SCREWS
assure tight cover fit
EXTERNAL MOUNTING FEET eliminate need for conventional leaky mounting holes within the enclosure
NEOPRENE GASKET
provides positive cover seal
WELDED TIGHT ENCLOSURE without knockouts excludes dirt, dust, oil, and splashing coolant

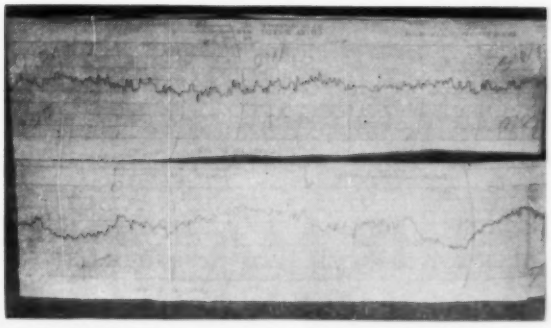
This new heavy duty switch, built to NEMA XII specifications, is "tailor-made" for applications requiring the exclusion of dirt, dust, oil and coolant.

The rugged, visible-blade switch mechanism within the special industry enclosure has all the performance features that have made Square D an overwhelming "first choice" for fifty years.

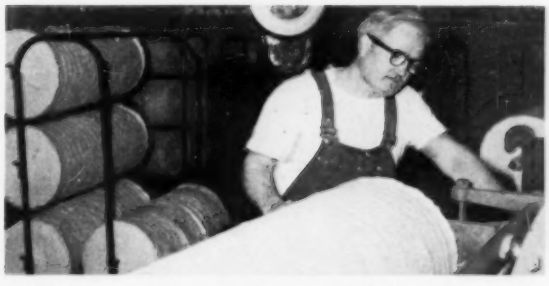
ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

UNIFORMITY ANALYZER with a new drive to run the sliver at 5 ft. per sec. showed up unevenness in the lap.



CHARTS show card-sliver evenness before (top) and after (bottom) the faulty picker was corrected.



PICKER producing the uneven lap was completely overhauled when the tests identified the faulty picker.

CARD-SLIVER Test Points Finger at Faulty Picker

• A Southern print-cloth mill reduced uneven yarns by tracing faults to the picker. By running card sliver through a uniformity analyzer at high speed and noting long-term variations, the mill was able to identify the faulty picker and correct it.

By **MICHAEL LONDON,** Assistant Editor, TEXTILE WORLD

A Southern cotton mill producing print cloth was faced with the problem of uneven yarns coming from its spinning room. About the same time, it found that the coefficient of variation of card-sliver weights was uncommonly high.

The mill suspected that picker laps were causing the unevenness, but the identification of the faulty picker or pickers posed a problem. It then hit on the idea of testing card sliver for evenness variation to determine which of its four pickers was at fault.

A lap from each picker was processed into card sliver on one metallic-clothing card. Metallic clothing was used to eliminate variation caused by stripping. Using its Brush uniformity analyzer with a high-speed drive, the mill tested four card slivers, each representing the lap from a different picker. The drive ran the sliver through the tester at 5 ft. per sec.

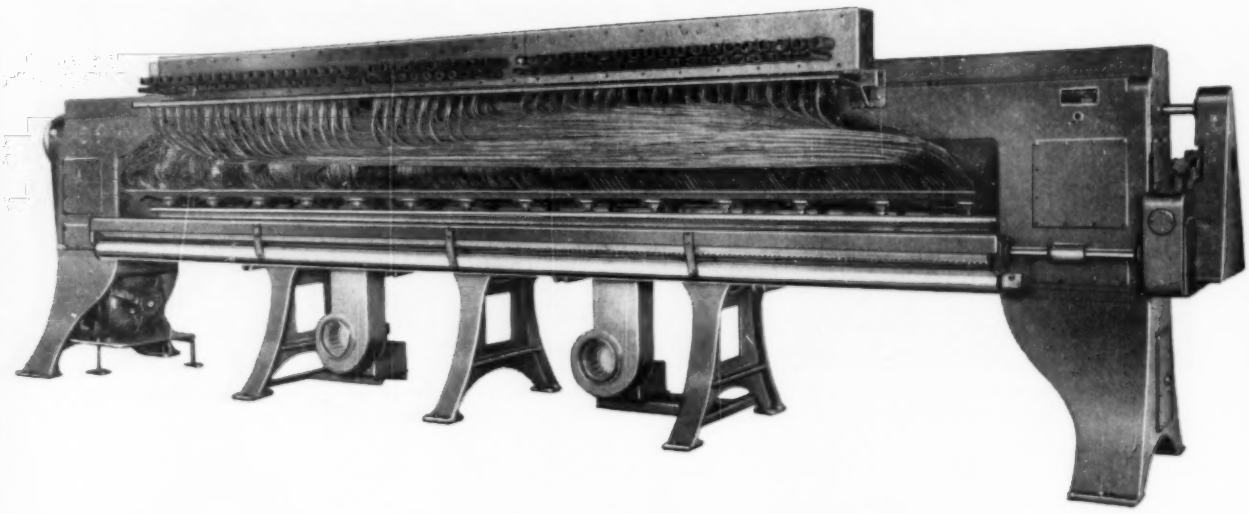
Short-term variation was filtered out, and the amplification was increased to magnify possible picker-lap variations. Since the mill's carding operation has a draft of 100, every 25 ft. of sliver represented 3 ins. of lap. The results were calculated on a 1-in.-sensitive basis.

Running at the high speed, one of the slivers showed a significant variation: it had a nonuniformity of 44% while the others ran around 31%. The picker that produced the uneven lap was completely overhauled because the specific trouble within the picker was unknown.

Tests on the sliver after the picker was corrected showed a nonuniformity of 31%, a figure right in line with the results of the other three pickers. With the cause of the unusual variation eliminated, the spinning department was again able to produce high-quality yarns.

COBBLE
TUFTING MACHINES

THE MACHINE THAT READS!



The above illustrated machine is our Model CB-5000 machine, equipped with pattern attachment* for finishing 15 foot loop pile tufted carpet with embossed Patterns of high and low pile.

Inexpensive patterns are made by cutting out the pattern in plastic tape which covers a metallic pattern shell. The machine "reads" the pattern by tracing over it with electrical contact fingers as it revolves on a drum.

Any pattern can be made which can be drawn in an 18" width of repeat. Patterns are changed almost as easily as changing a phonograph record, and only seconds are needed to make the change.

Intricate patterns can be reproduced as easily as simple patterns, and either can be run without reducing the speed of the machine.

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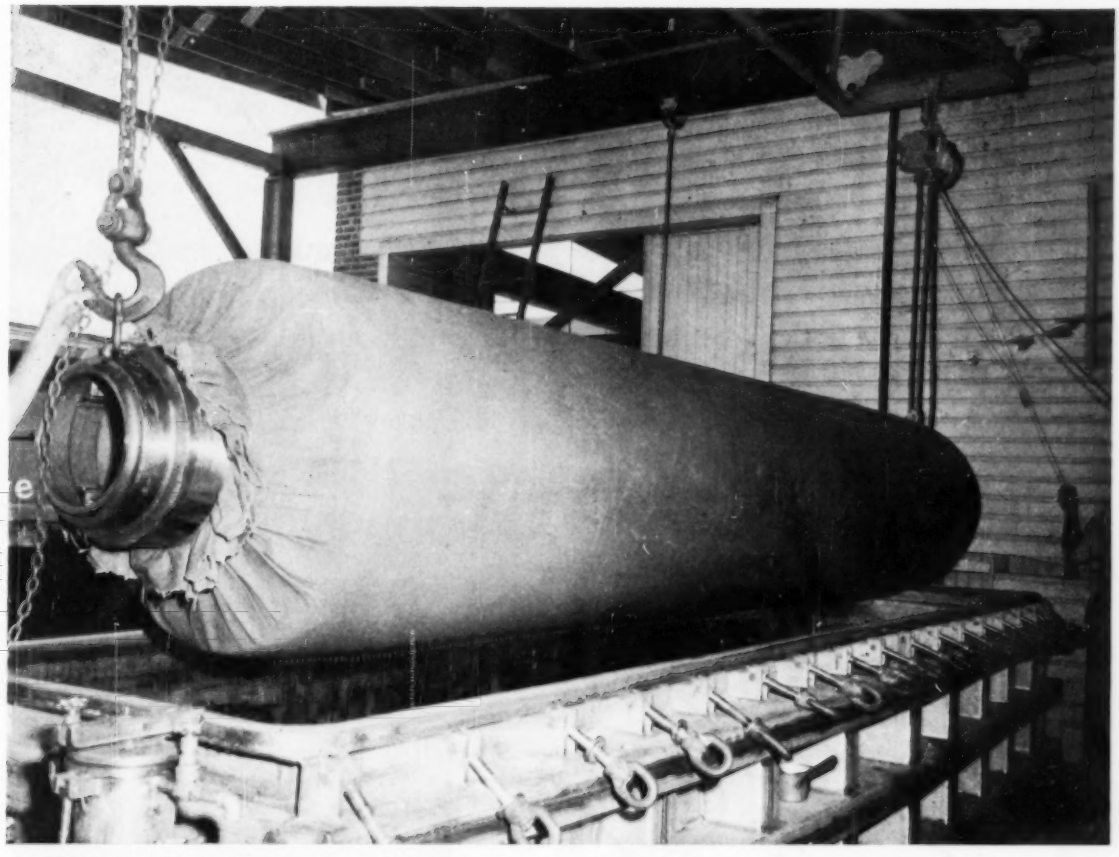


HOISTING the dyed roll requires two three-ton hoists mounted on a carriage that rolls on overhead rails. Future plans include monorail transportation direct to the extractor.

How To Pressure-Dye TUFTED CARPETS

They used to say if you wanted to do a big job, go wash an elephant. Dyeing up to 3,000 lbs. of tufted carpet in roll form is something like that. But Rogers Dye & Finishing Co. at Dalton, Ga., is geared for it. Starting with a Ten-Tex machine that handles 9-ft. carpeting, the mill has just added a Burlington Engineering Co. machine that will dye 15-ft. material. Advantages are—

- **Good leveling from side to side**
- **No rope marks**
- **Less handling**
- **Higher production**

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

PRESSURE DYEING on perforated beams has invaded another field —dyeing tufted carpets. Because these bulky fabrics weigh up to 5 lbs. per sq. yd., you have to be set up to handle six to seven tons of carpet, water, and beam when the load is removed from the dyeing machine. A heavily constructed batcher and a portable let-off rack are necessary auxiliaries. A large Birch Bros. vacuum extractor with two vacuum pumps is used to remove excess water after dyeing.

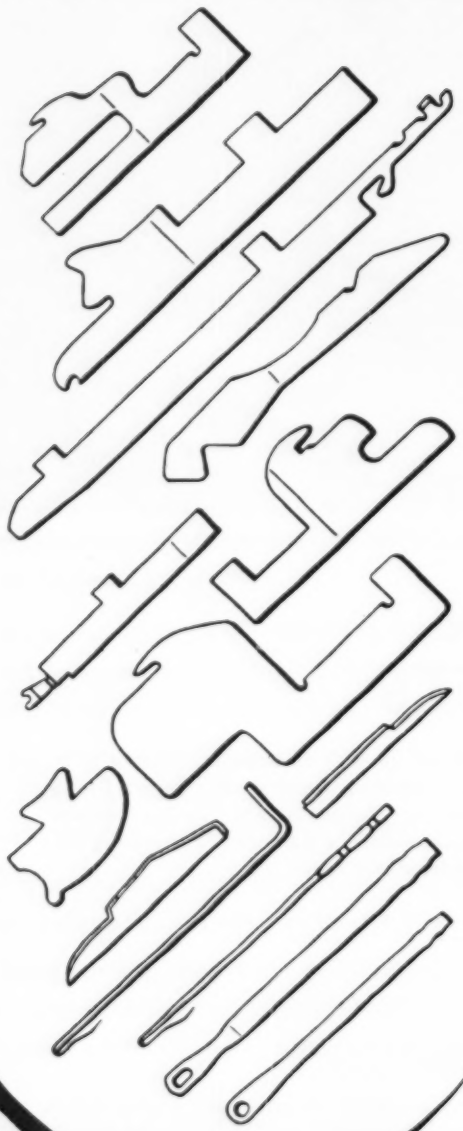
As with pressure-dyeing other fabrics, the carpeting is made up into batches directly on the perforated beams used for dyeing. Cuts at Rogers average 75 to 100 ft. in length, and batches 450 ft. long can be handled in the new dyeing machine. The dry weight, exclusive of the 1,000-lb. beam, may run as high as 3,000 lbs.

Carpeting that is to be pressure-dyed is not latex-coated before dyeing because good permeability is necessary in any type of package dyeing.

CONTINUED ON PAGE 192

Knitters Everywhere

ECONOMIZE WITH IVES NEEDLES AND PARTS



IVES products can help you...

- ***REDUCE** costs*
- *make **BETTER** fabrics*
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For 86 years, mills have relied on Ives for the finest needles and knitting machine parts, a few of which are illustrated to the left.

These parts are precision-made, specially hardened and tempered from extra durable vanadium steel to give a smoother and longer-wearing product.

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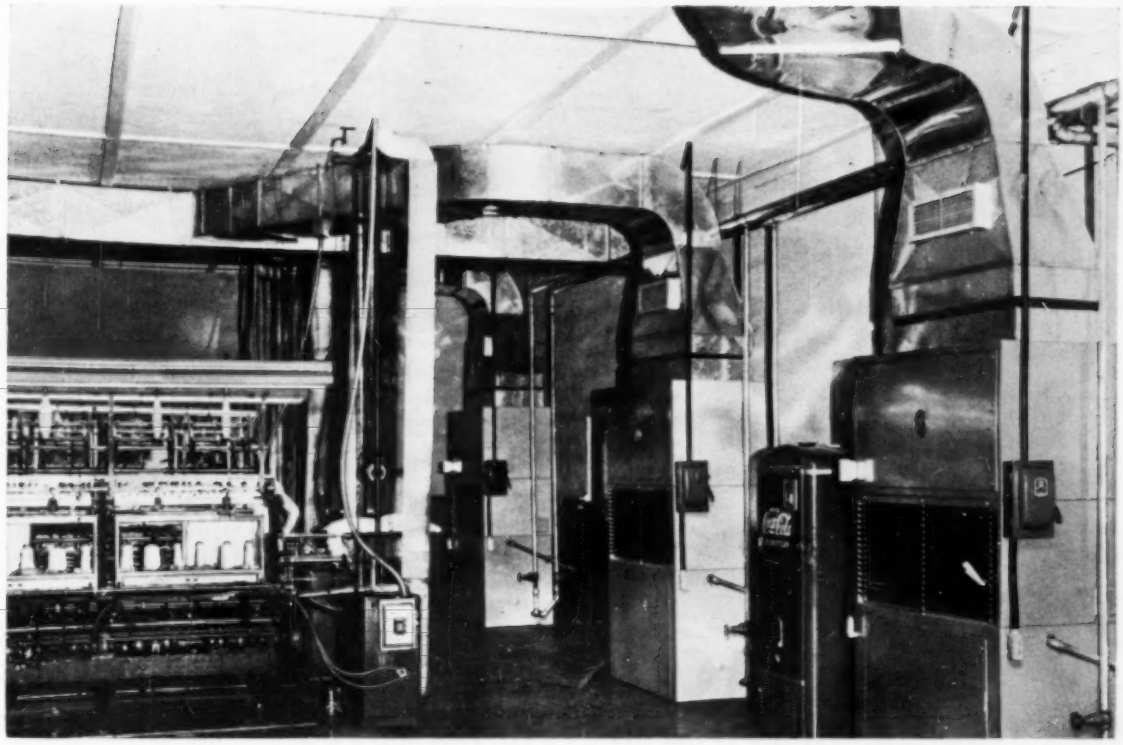


AIR-CONDITIONING UNITS are arranged along the wall. The duct work leads into the regular ducts, which are also used for heating.

Air Conditioning Almost Doubles SEAMING PRODUCTION

• Four water-cooled units are tied into two duct systems that run the length of the plant to keep a full-fashioned hosiery mill cool during the hot summer months

BEFORE AIR CONDITIONING WAS INSTALLED at John Hardy & Son, Inc., Pulaski, Tenn., full-fashioned seaming production was 225 doz. pairs of stockings per day. One week later, after the air-conditioning system had been installed, the same operators seamed 444 doz. stockings during the same length of time.

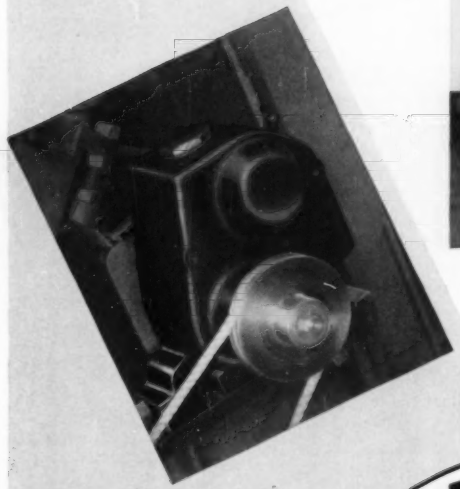
The air-conditioning system consists of four Chrysler Airtemp 15-ton packaged water-cooled units tied into two ducts that extend the full length of the mill. The same duct work is also used for heating.

Two of the air conditioners, one on each duct system, are controlled by a thermostat and a humidistat to remove moisture during in-between seasons. Heat is used to control temperature under these conditions.

Moisture is added during the wintertime from a spray-type humidifier and atomizing nozzles.

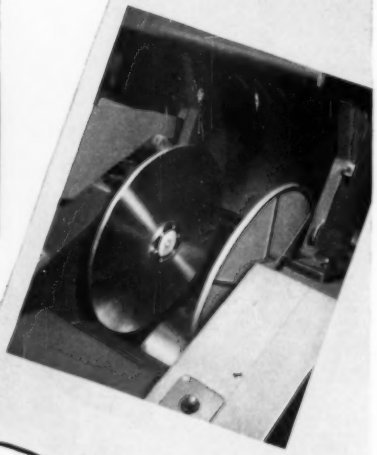
Knitting-machine maintenance has been reduced considerably, and the regular semiannual cleaning of knitting machines has been discontinued since the installation of the air-conditioning system because the air is filtered and cleaned.

Because of the added production in the seaming department, Saturday work has been eliminated and overtime costs have been saved.



14" AND 15" COILERS

- Lengthens the doffing cycle.
- Adds extra poundage per can.
- Increases production per man hour.



4" PINTLE FOR LAP WINDERS

- Full spools 2" larger in diameter for greater productive efficiency.
- Improved grease retention in bearings for better lubrication.
- For increased stud rigidity and load capacity.

ANTI-FRICTION COMB BOX

- Requires only routine inspection.
- Vibration and power consumption at a minimum.
- Micrometer-type two-way adjustable foot-end stand.

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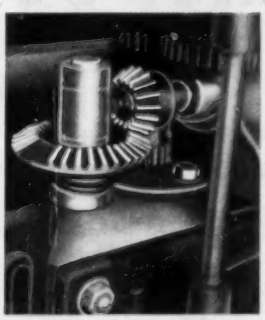
ANTI-FRICTION COMPOUND

- Extremely accurate, with very low power consumption.
- No oil drip — three grease fittings only.
- More compact arrangement of internal gearing.



STEEL GAP GEAR FOR ROVING FRAMES

- Eliminates gap gear tooth breakage.
- Spring cushioned meshing of gears at change of builder motion.

MULTI-DURO SLASHER ROLL

- Improves evenness of size application.
- Reduces size consumption.
- Less shedding at split rods and loom.
- Minimizes end breaks in the weave room.

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POINTERS for SUPERVISORS

When To Listen—and When Not To

- Supervisors hear a lot about the importance of listening. What they don't hear often enough is the reminder that listening has limitations and drawbacks.
- Here's a more-realistic approach that points out the pros and cons of listening.

By **AUREN URIS,** Research Institute of America

You can accomplish worthwhile things by listening with an open mind to your employees, your colleagues, and even your boss:

Good will of the speaker. Most people would rather talk than listen. Accordingly, you furnish an opportunity for someone who has a story to tell, an alibi to make, an idea to describe. They'll appreciate your consideration and self-sacrifice in listening.

Pressure release. The vocal chords can be an emotional safety valve, as has been proved time and time again. Surely, you yourself have had a chance to get a load off your chest by packaging it in words and giving it the heave-ho, sentence by sentence.

Information. Your ears are a darned effective news-gathering device. In listening to Tom Smith, a new employee, for example, you gather information on two different levels:

a. Surface content. He tells you where he worked last, how long he held down the job, what his duties were. By this means, you get a pretty complete picture of Tom Smith's background.

b. Hidden content. But, in addition, you listen to the way Tom Smith speaks. His choice of words, for example, gives you a basis for judging his educational background and level of thinking. If he speaks with confidence and with aggressiveness, you get some idea of his general approach to people and problems. You can make an appraisal of how he'll respond to orders, for example.

Alternatives to Listening

All these benefits and more are yours if you'll take the pains to listen to your employees, whether they come to you with a complaint, a question, or just a load to get off their chests.

What's wrong with listening, then?

Like any other overadvertised item, its real worth becomes obscured. Listening can be grossly oversold and overrated.

Here, for example, are four perfectly good alternatives to listening. As a matter of fact, in the suitations described, they will do by far the better job.

1. Questioning. A fellow supervisor from across the hall comes in with a long, rambling monologue, his idea of a solution to a problem you and he share. Let him rave? Not at all. A few questions on your part can help him think through more clearly the ideas that are at present mere glimmerings.

2. Contradiction. Let's say you're sitting at your desk one fine day and employee Joe Blow comes in with a story. It involves another member of your department, and Joe's tale about him is enough to blast the poor fellow's reputation to smithereens. You know for a fact that Joe's account is completely unfair. You owe it to the victim of his attack to stop listening and to take strong issue with Joe, to defend the other man.

3. Action. Suppose you've called your group together to talk over some work problems. Prime purpose of the get-together is to map a plan of action for cutting down on bad work. Customers are complaining. Your salespeople have been put on the spot.

Everybody wants a chance to speak up. The subject at hand gets lost in a fog of words that includes gripes about the lack of cooperation, accusations of poor performance, and failure of individuals to do their jobs properly. Somewhere along the line, it will be wise for you to cut short the hassle and get the discussion back on the track.

4. Direct Response. An employee comes to you with a job problem. It's pretty clear to you what the solution is.

Here the "listen" people make a strong point. "Don't interject your own judgments," they say. "It's much better to let the man talk his way through to a personal insight into the problem he has raised."

But what if the man is simply looking for an answer that you, by virtue of your knowledge and experience, are qualified to give? Certainly if you're a mature person who has had experience in the area the employee is discussing, you might be doing him a good turn by letting him benefit from your knowledge.

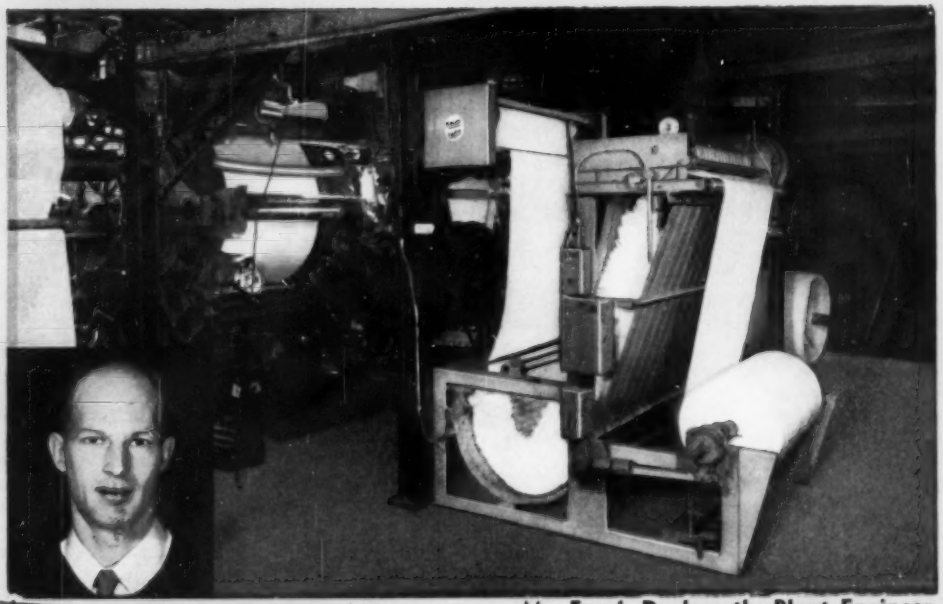
What's Bad About Listening?

But here you run straight into one of the dangers of

CONTINUED ON PAGE 133

Mount Hope SYSTEM

The GREENWICH PRINTING & DYEING CO., INC. reflects savings due to Mount Hope System throughout entire plant!



Mr. Frank Duckworth, Plant Engineer, shown above with Mount Hope Continuous Roll Feed Installation, says: "We are installing this money-saving equipment on all our machines!"

GREENWICH PRINTING & DYEING CO., INC.

DECEMBER 30, 1954

MR. DOUGLAS ROBERTSON, PRESIDENT
MOUNT HOPE MACHINERY COMPANY
15 FIFTH STREET
TAUNTON, MASSACHUSETTS

DEAR MR. ROBERTSON,

YOU'LL BE PLEASED TO LEARN THAT THE INITIAL MOUNT HOPE CONTINUOUS ROLL FEED SYSTEM WE RECENTLY INSTALLED IN OUR PLANT HAS PROVEN SO SUCCESSFUL THAT WE ARE INSTALLING THIS MONEY-SAVING EQUIPMENT ON ALL OUR MACHINES.

EVEN MORE IMPORTANT THAN THE INCREASED PRODUCTIONS, CONSISTENTLY HIGH QUALITY AND MARKED REDUCTION IN SECONDS, MADE POSSIBLE BY THESE MOUNT HOPE UNITS, IS THE VERSATILITY THEY GIVE US.

OUR ENTIRE PLANT REFLECTS THIS REDUCED COST OF OPERATION THROUGH SAVINGS IN TIME, LABOR, AND OVERALL EFFICIENCY.

SINCERELY YOURS,

GREENWICH PRINTING & DYEING CO., INC.

Frank Duckworth

FRANK DUCKWORTH, PLANT ENGINEER

FD/11

Get the facts now. Start savings in your plant promptly with the Mount Hope Cloth Handling System. Have us survey your plant.

MOUNT HOPE MACHINERY COMPANY

15 FIFTH STREET, TAUNTON, MASS.

—Originator of Modern Expanders—
Leader in Cloth Handling Equipment

too much listening—the temptation to start thinking of yourself as an expert who can solve all the problems, even personal troubles, you listen to. Actually, of course, you're not; and you do yourself and the other fellow a bad turn by trying to play amateur psychiatrist.

Here's another possibility. By being ever-ready to lend an ear, you run the danger of being talked deaf, dumb, and blind. You're a busy supervisor and you simply haven't got the time. Sure, there are situations when the greatest service and kindness you can render is to let a man unburden himself to you. But you've got a job to do. And just as truly as first things must come first, second things must come second.

And listening skills are like other abilities. If you overdevelop yourself in one skill, you tend to use this avenue of approach to every problem you face. The supervisor who goes overboard on the advantage of listening will lose the ability to deal with a problem according to the treatment that will prove most effective.

Now the question is: How good a listener are you? The self-rating quiz below can help you get an approximate idea.

How Good a Listener Are You?

Answer each one of the questions below by choosing the sentence or phrase that you feel is best. You'll find scoring instructions at the end of the test.

1. Your superior asks, "What are the chances of your finishing up on that order today?" Which one of the meanings below does *not* fit the words he's used:

a. "I'm just making conversation to make you feel good."

b. "It would help if you'd speed it up a bit."

c. "That customer will be unhappy if we're late."

d. "Is there any way I can help you get it done?"

2. A fellow supervisor says, "Man! I could use six hands and two heads today." What meaning *couldn't* be gleaned from his words:

a. "I'm really rushed."

b. "Everything's going along smoothly."

c. "Could you maybe lend me a hand?"

d. "There's more to do than can be done."

3. You're interviewing a job applicant. To put him at ease, you say "Nice day, isn't it?" He spends the next five minutes talking about the weather. Which is the likeliest possibility?

a. He's trying to impress you with his ability to hold the floor.

b. He's nervous and trying to hide it.

c. He's extremely interested in the weather.

4. An employee says "Boy! Am I bushed!" Which one of these meanings is *not* conceivably present in the words?

a. "I'm tired."

b. "I may not get my quota done today."

c. "This would be a good time to suggest a major change to me."

d. "That was a dandy party last night."

5. For as long as Ed Smith has been on the payroll he's always started the day with a pleasant "Good morning." Today he walks right past you without a word. Would you—

a. Immediately walk over and ask what was wrong?

b. Forget about it?

c. Keep you eye on him, and watch for further developments?

Your Score

If these questions have reminded you that there is often a meaning behind words, your score is already high. To get your numerical score, check your answers against these: 1-a, 2-b, 3-b, 4-c, 5-c. Give yourself 10 points for each correct answer. Here's how you rate: 40 to 50—excellent; 30 or less—you need practice.

GA. T.O.E. CONTINUED FROM PAGE 109

standard size, but they gave no further details.

All mills reporting on slashing dyed section beams take extreme care in handling them. Three problems are present in all mills: (1) wet beams becoming heavy-sided, (2) selvages are blown by air-drying in the dyehouse, and (3) determining the correct moisture content of wet yarns between the predry cylinders at the slasher and the size box.

Here's how mills are handling the three problems:

Mill A—"If dyed beams are left for a long time, we turn them over by hand. We store the wet beams on an extra slasher creel. We have turned a whole set on end when it is loaded at the slasher creel so that the water is evenly distributed on both ends.

"We have a lot of trouble with selvages being blown by air pressure in the dyehouse. The selvage ends lap up and will not run, especially at the start-up.

"The moisture content of our wet warps is about 15% after they pass over the predry cans."

Mill B—"Wet beams are stored horizontally, and we turn them 180° every 8 hrs. We receive dyed beams occasionally that have the yarn placed ¼ in. away from the head all the way around the beam. These defective beams don't cause much trouble unless the yarn ends fall into this space. If the ends do fall into the space, we lap the number of ends required and continue to run the set.

"We leave between 8 and 10% moisture in the yarn at the slasher predry can. The exact moisture content depends on the style of fabric."

Sixteen mills reported on their methods of determining warp stretch at the slasher. All 16 mills are measuring the stretch with one or more yardage counters.

MODERNIZED WEAVE ROOM CONTINUED FROM PAGE 119

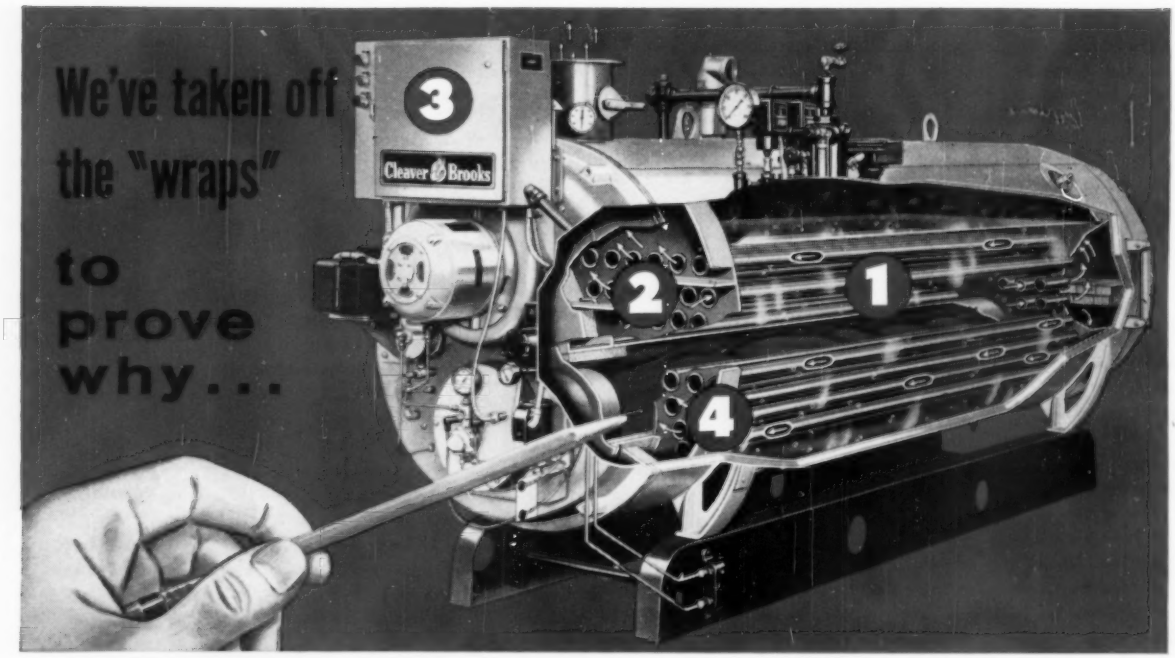
area under the looms and about 18 ins. all around three sides is painted gray. The gray paint extends flush with the loom feet in the weavers' alleys. Looms are set on mounting pads.

The floors are maintained periodically by the Tennant method.

The looms are wired from conduits under the floor. General Electric motor-starting switches are used.

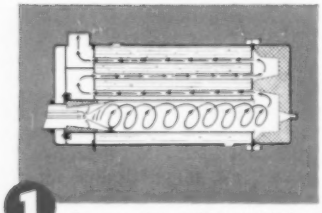
Continuous-row fluorescent lighting adds to the general neatness and attractiveness of the weave room. The lighting is also very effective. Practically no shadow is formed even when an object is held directly above the white filling in a loom battery.

Relative humidity of 80% and a temperature of 80° F. are kept in the weave room.

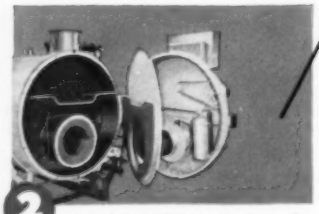


CB is America's most modern boiler

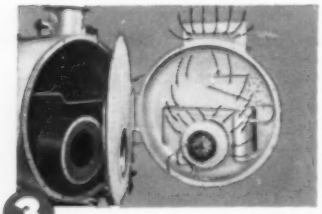
unmatched in performance quiet operation low-maintenance



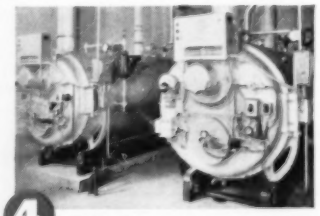
1 **Four-pass design with forced draft** — Proved the most efficient combination to transmit greatest percentage of heat to boiler water. Blower provides cool, clean air in required density and volume for efficient fuel combustion — lowers fuel costs.



2 **Hinged doors front and rear** — Expose tubes for quick inspection or cleaning. Operating equipment and refractory stays intact. Cuts routine maintenance from hours to minutes. Doors are gasketed with preformed asbestos to be seal-tight.



3 **Caseless fan keeps operation "hospital quiet"** — Air is drawn into a large plenum chamber-which confines and deadens air noises. Even at peak loads, CB is well within requirements for low sound levels where this is a factor.



4 **Automatic controls are centralized for convenience, efficiency and safety** — Air is metered with oil (or gas) in proper ratios to economize on fuel. Electronic flame failure control is standard equipment.

CB boiler's remarkable performance in hundreds of applications has proved an "eye-opener" wherever installed. Take a minute's time and see why.

Combined into one boiler package are all the features *proved necessary* to: (1) save fuel dollars, (2) simplify maintenance, (3) assure silent performance, (4) maintain safe, automatic operation.

Talk to your nearby Cleaver-Brooks boiler representative — he can assist you in selecting the proper unit from a complete line of sizes, steam or hot water, 15 to 250 psi. Or, write direct for literature. Cleaver-Brooks Company, Dept. A, 360 E. Keefe Ave., Milwaukee 12, Wis., U.S.A. Cable Address: CEEBEEWEST — all codes.

BOILERS—STEAM OR HOT WATER—FOR HEATING OR PROCESSING, IN SIZES 15 TO 600 HP, 15 TO 250 PSI.

Cleaver Brooks®

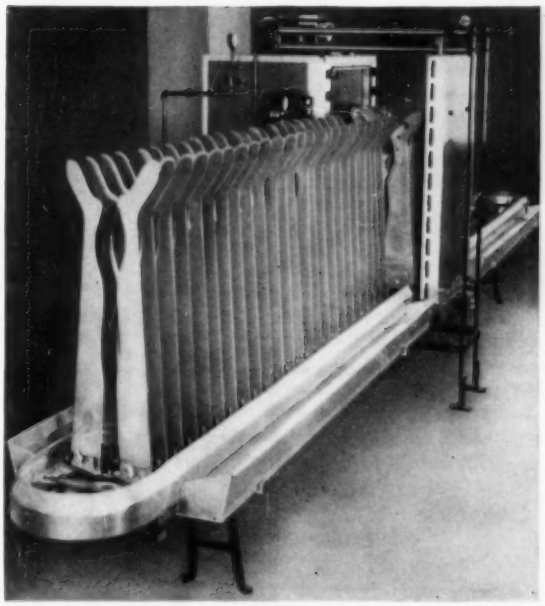
TWENTY-FIVE YEARS OF LEADERSHIP
BY THE ORIGINATORS OF THE SELF-CONTAINED BOILER

EQUIPMENT and SUPPLY NEWS

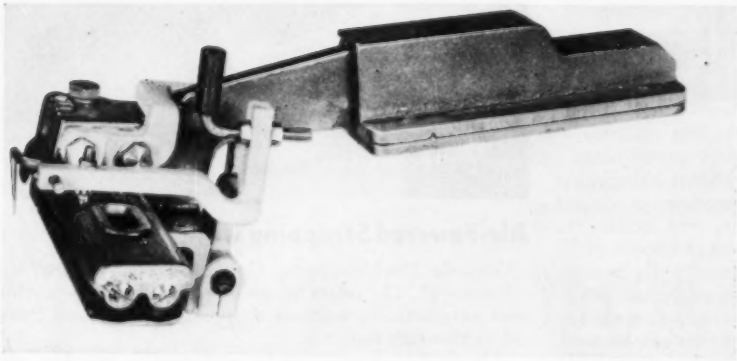
Hosiery-Finishing Machine

A new hosiery-finishing machine that doubles production without increasing floor space has been developed by Turbo Machine Co., Lansdale, Pa. Called the AD-96, it is a two-operator machine for preboarding and finishboarding seamless and full-fashioned stockings. Double tracks on each side of the machine hold forms upright for dressing or stripping. The machine has a total of 96 boards.

Operators work facing each other. Forty-eight forms enter the cabinet as the Turbo spiders close up like an accordion. Operators then move to the other side of the machine to strip the 48 forms that have just left the cabinet.



Circle T-1 on Reader-Service Card



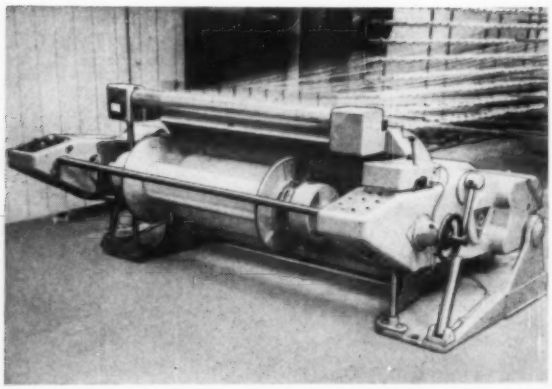
Circle T-2 on Reader-Service Card

Temple-Post Attachment

Better selvages are made on many types of woven cloth with a selvage post attachment just released by Draper Corp., Hopedale, Mass. The attachment is made for all two- and three-roll adjustable-top Draper temples.

The device is mounted on a torsional rubber bearing located below the cloth line. This feature, coupled with rugged construction, practically eliminates wearing of parts.

No lubrication is required. Therefore, danger of oil stains on woven cloth is greatly reduced. The device is said to operate a long time with little maintenance.



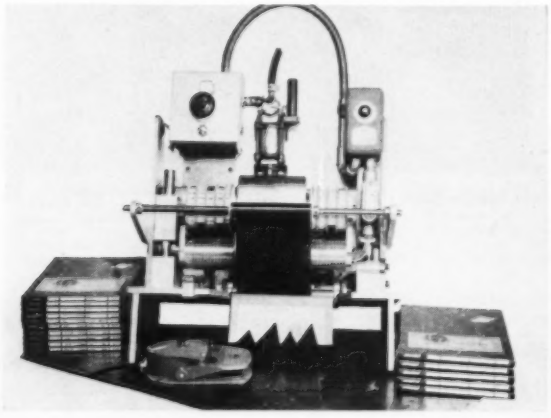
Variable-Speed Beamer

A variable warping speed of 140 to 850 yds. per min. is possible with a beamer produced by Crowther Ltd., Leicester, Manchester, England. The beamer provides direct beaming for cotton, staple-rayon, and filament-rayon yarns.

The machine can handle section beams from 54 to 84 ins. between flanges. Flange diameters up to 36 ins. can be used. The beam weight can reach two tons. The beamer is driven by a chain running in a fully enclosed oil bath; there is no clutch or speed-reduction unit.

An electric stop motion stops a two-ton beam revolving at 850 yds. per min. in 1½ revolutions. All moving parts except the section beam are completely enclosed. A motor-driven hydraulic-jack system is used to put section beams in place and doff them.

Circle T-3 on Reader-Service Card

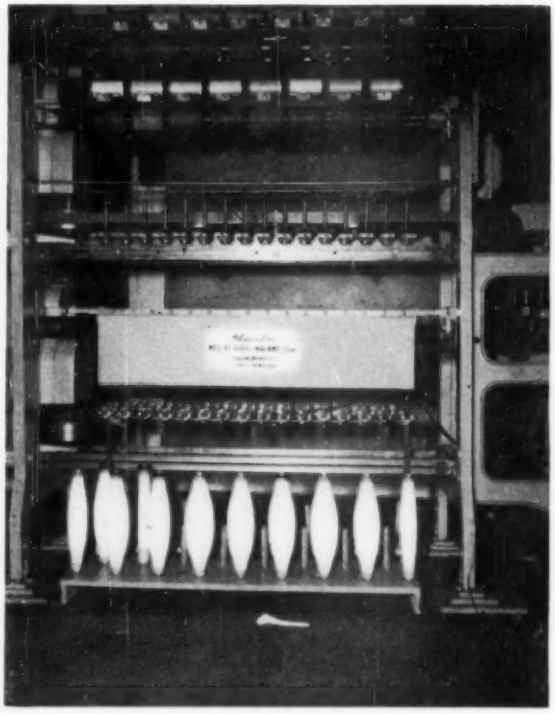


Box-End Coding Machine

A machine for imprinting codes and product information on flat box ends to aid identification has been developed by Industrial Marking Equipment Co., 454 Baltic St., Brooklyn, N. Y. The unit, which operates at a speed of 30 impressions per minute, utilizes a heat-transfer dye process. It contains a complete built-in set of numbers and letters that are easily arranged by the operator to meet any combination requirement. A variety of colors can be used.

The unit is designed to simplify coding and solve many existing inventory problems.

Circle T-4 on Reader-Service Card



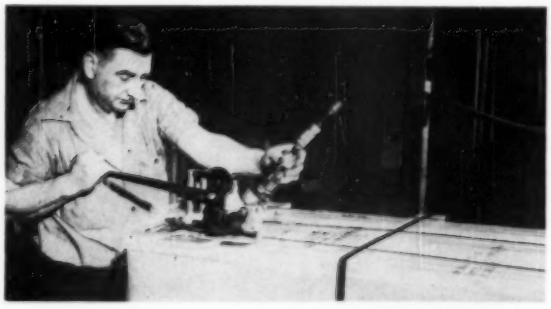
Stretch-Yarn Attachment

Glacelon equipment for producing stretch yarns can be applied to any make or model uptwister. The spindle speed is above 30,000 rpm. on nylon and Dacron yarns.

The yarn is taken from a pirn through an adjustable-tension device to a heating chamber. The heat in the chamber is controlled to within ± 0.5°. Room temperature is also compensated for. The yarn then passes through a false-twisting spindle to the take-up bobbins.

The device, developed by K. W. Glace, is obtainable from Gibbs Machine Co., Inc., West Lee St., Greensboro, N. C.

Circle T-5 on Reader-Service Card



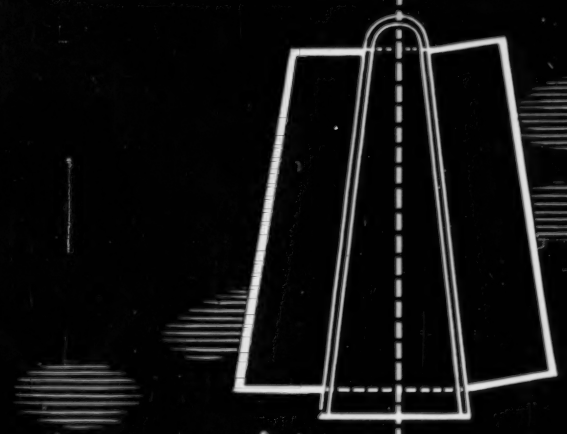
Air-Powered Strapping Unit

Signode Steel Strapping Co., 2600 N. Western Ave., Chicago 47, Ill., offers an air-powered strapping machine that automatically tensions strapping, seals it, and cuts it off in two easy motions.

The unit is designed to be used with ⅝- and ¾-in. steel strapping. The easy-loading magazine holds 75 seals.

Circle T-6 on Reader-Service Card

Which Half



Do You Choose?

The illustration shows a cross section drawing of a mongrel rayon cone (actually it couldn't be produced). The left hand side is shown as if wound in the conventional manner with the base angle of the cone at 90° to the axis of the spindle. The right hand side is shown as if wound on a Foster Model 75 Machine with the base angle of the cone at 90° to the *surface of the yarn carrier*. Which half of the cone do you choose? It makes a lot of difference, particularly if you're a knitter, and here's why.

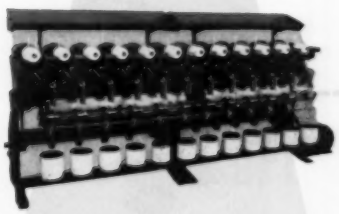
The Foster Model 75 method of winding places each layer of yarn slightly above the adjoining inner layer so that its delivery, no matter how slow, is unobstructed. Thus "nip-i-tis", or tight loops in the knitted fabric, are practically eliminated.

This unique wind also directs the pressure of the yarn *downward* against the taper, so that the cone holds its shape in transit and sluffing is minimized.

These advantages are not characteristic of a cone wound in the conventional manner.

If you do your own cone winding, minimize "nip-i-tis" by installing Foster Model 75 Machines. If you do not do your own winding, you can still minimize "nip-i-tis" by specifying Foster Model 75 cones.

Send for Bulletin A-92-A and learn about the many other advantages of the Foster Model 75.

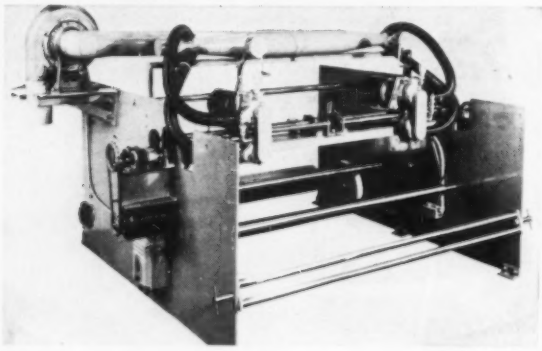


FOSTER MACHINE CO.
Westfield, Massachusetts

FOSTER F MODEL 75

FOR WINDING RAYON, NYLON AND OTHER YARNS

For more information, write direct or use Reader-Service post card.



Selvage Trimmer

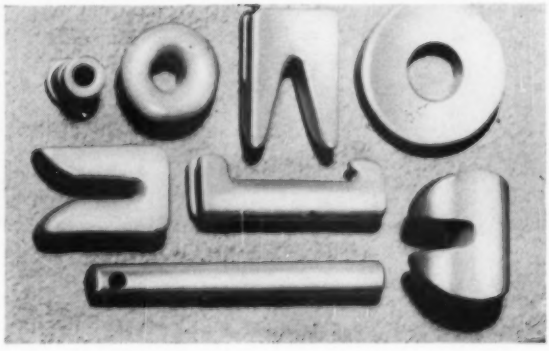
A machine designed especially for removing threads from fabric selvages has been developed by Hermas Machine Co., Hawthorne, N. J.

Automatic guiders keep the selvages in contact with the trimming devices at all times. A loop-clipping attachment clips floats on box-loom fabrics so that the trimmer can remove the hanging ends. Cut threads are removed by a vacuum system.

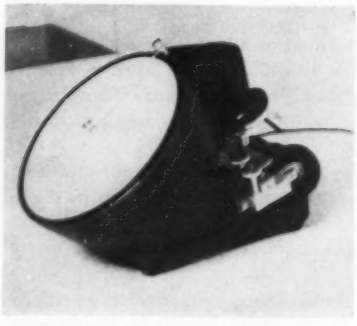
Circle T-7 on Reader-Service Card

Harder Thread Guides

A series of alumina-ceramic thread guides, said to be harder and longer-lived than any heretofore developed, are now being produced in volume by Titania Div., American Lava Corp., Chattanooga, Tenn. The guides, made of AlSiMag 614, are designed to meet special abrasive problems that AlSiMag 491 and 513 cannot handle. Other special-purpose alumina compositions also have been developed to meet requirements involving porosities.



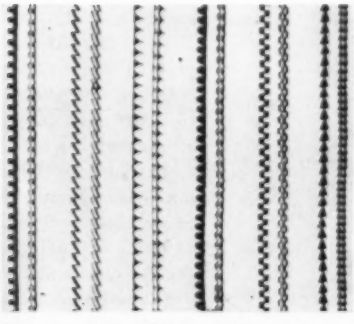
Circle T-8 on Reader-Service Card



Projection Microscope

The Lanameter, a projection microscope designed for the measurement and analysis of wool fibers, has been announced by William J. Hacker & Co., Inc., 82 Beaver St., New York 5, N. Y. The instrument consists of a microscope, a light source, and a viewing screen which are combined into a single unit. Magnification ranges from 75 to 500x. A sliding, rotatable, transparent scale is provided.

Circle T-9 on Reader-Service Card

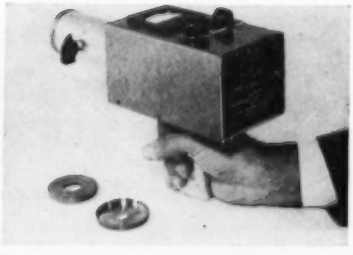


Decorative-Stitch Machine

A two-needle sewing machine capable of a wide range of decorative stitches has been developed by Singer Sewing Machine Co., 149 Broadway, New York, N. Y.

An important feature is an adjustable needle holder that permits various needle settings from $\frac{3}{32}$ in. to $\frac{7}{32}$ in. Rated speed is up to 2,000 stitches per minute, varying with materials and operations performed.

Circle T-10 on Reader-Service Card

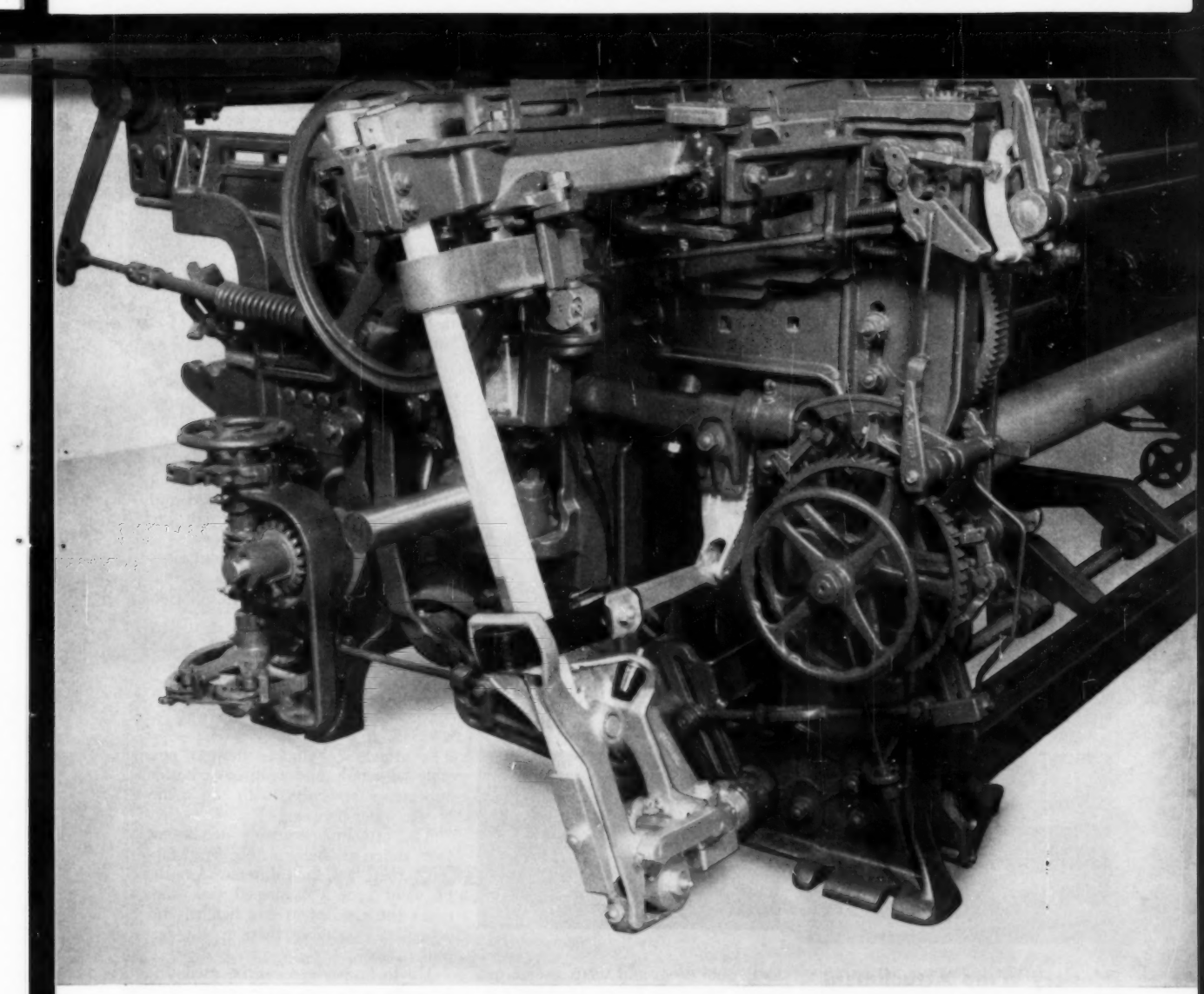


Electrostatic Voltmeter

The electrostatic voltmeter developed by the Institute of Textile Technology, Charlottesville, Va., is now being manufactured by Custom Scientific Instruments, Inc., Kearny, N. J.

The voltmeter detects and measures electrostatic charges on textile materials during processing. The unit is portable. The electrostatic voltmeter will quickly locate a charged area, give an indication of the amount of electrical charge on moving or stationary equipment or materials, and determine the polarity of the charge.

Circle T-11 on Reader-Service Card



NEW DRAPER LINKAGE PARALLEL ASSEMBLY IMPROVES LOOM OPERATION... CUTS MAINTENANCE COST

Extensive mill trials prove the Draper Linkage Parallel Assembly results in a more uniform, controlled picking action. This parallel assembly eliminates "jump" and "play" in the picker stick . . . improves overall loom operation and reduces wear on pick motion and parallel parts.

A fixed power block position allows more uniform power settings to be maintained. Clamp-fit of the assembly on the rocker shaft permits easy, fast application. *Picker sticks may be replaced without altering Parallel settings.*

The new aluminum pick arm and lug strap connection (illustrated), while not required with the above application, is recommended.

For complete details on this *cost* and *labor saving mechanism*, contact your nearest Draper representative or write:

DRAPER CORPORATION

HOPEDALE, MASS.

ATLANTA, GA.
GREENSBORO, N. C.
SPARTANBURG, S. C.

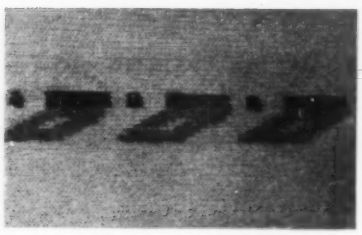
Tray-Weighting System

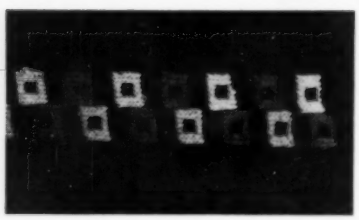
A tray-weighting system for spinning frames that has weighting arms instead of cap-bar nebs and slides has been announced by Platt Bros. (Sales) Ltd., Oldham, England.

The weighting arms positively align the top rolls, house the spring-weighting units, and retain the top rolls when they are lifted for cleaning or piecing up. Pressure is applied at both ends of the roll so that each spring carries only half the load and so resilient springs with a high life factor are used.

A simple one-hand movement gives complete access to the rolls so that the sliver can be threaded easily. Settings are quick and simple.

Circle T-12 on Reader-Service Card





Hosiery Wrap Attachment

Colorama is an attachment fitted to Banner wrap and wrap-reverse machines made by Edley Machine Co., 1914 English St., High Point, N. C.

The attachment makes designs possible with only one wrap color beside another wrap color with no plain needle wales between.

The attachment places needles at two different heights during wrapping; there are four different lengths of wrap eyes. A special jack cam raises the needles to one height, and a booster cam raises them to the second height.

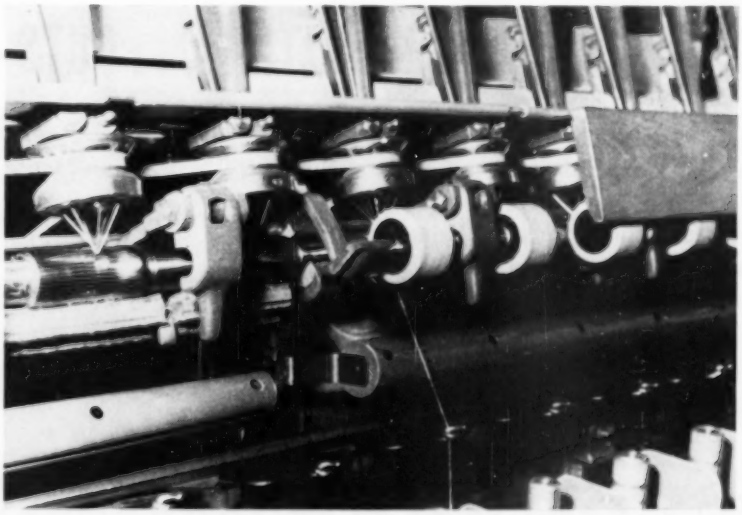
Up to four colors can be used side by side with no intervening plain needle wales between them.

Circle T-13 on Reader-Service Card

Spring-Weighted Rolls

The self-weighted, all-steel delivery rolls on Rieter woolen ring spinning frames have now been replaced by spring-weighted rolls, according to an announcement by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J.

The new spring-weighted rolls are covered with J-490 Accotex cots made by Armstrong Cork Co. The resulting improved grip on the stock running through the nip is reported to afford higher drafts on wool and to permit running synthetics satisfactorily on the Rieter frames. Roping inserted in the top of the false-twist tube threads itself through both the needle trumpet and the roll nip.



Circle T-14 on Reader-Service Card

4/0

4/1

4/2

6/0

6/1

A NEW KIND OF CREEL - *LINT FREE CREEL*

This sparkling, mirror finished aluminum creel is without one single flat surface —on which lint can accumulate. Slubs are virtually eliminated.

Throughout the entire creel, the proven air-foil design is employed. There are no flat boards to obstruct air passage at any point. As a result, a full volume of air sweeps through the creel, cleaning all surfaces constantly and thoroughly.

Reports from mills state that the installation of this equipment **lowered cleaning costs 40%.**

This is the creel for you!

The ***LINT FREE CREEL*** is

- ADJUSTABLE— adaptable to any gauge.
- FLEXIBLE— handles small or large packages.
- MOVABLE— fits all frames.

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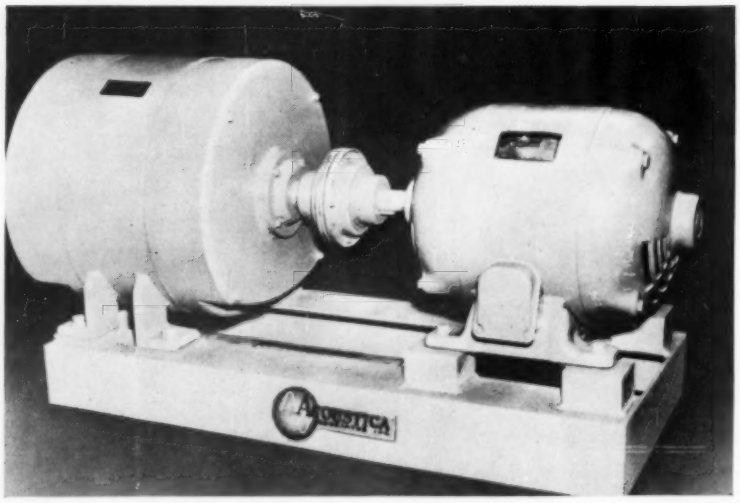


Circle T-15 on Reader-Service Card

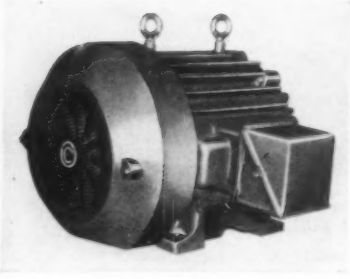
High-Frequency Alternator

High-frequency generators ranging in size from 2 to 150 kw. are being produced by Acoustics Associates, Inc., Glenwood Landing, L. I., N. Y.

The generators are capable of supplying economical power for energizing multiple arrays of above-audible sound-generating transducers. Applications in the dyeing field include jigs, pads, scouring machines, and package-dyeing machines.

The principle of rapid alternation of current up to 20,000 cycles per second produces violent agitation of processing solutions. Dye particles, scouring agents, or other chemicals penetrate synthetic or natural fibers very rapidly when subjected to this ultrasonic vibration.

Savings in time, steam, and materials are claimed when the system is used in textile processing.



Rerated NEMA Motor

Century Electric Co., 1808 Pine St., St. Louis, Mo., has announced the production of its rerated totally enclosed fan-cooled motor line in 7½- to 100-hp. series. The picture shows the Century 50-hp. TEEC Motor. This motor typifies the construction used in all the series.

In addition to meeting all NEMA requirements, the motors have such features as:

1. Six-layer insulation for the stator windings, and plastic-coated wire.
2. A ventilating fan that provides the same efficiency of cooling when the fan is operated in either direction.
3. Rib-type cast-iron frame construction for easy cleaning.

Circle T-16 on Reader-Service Card

Industrial Vacuum Cleaner

Vac-U-Max, an industrial vacuum cleaner that operates with compressed air only, has been announced by American Balmes Corp., 859 Summer Ave., Newark 4, N. J. The unit, connected to the existing air lines found in most mills, is said to develop more than twice the suction of a standard 1-hp. electric unit equivalent in size.

With no electrical connections, motor, bearings, or moving parts, the cleaner requires no maintenance; and there is no explosion hazard or other electrical danger. The cleaner can be used to eliminate blowing down with compressed air and spreading the dust and waste. The unit is easily moved about on four swivel casters.

Circle T-17 on Reader-Service Card

CONTINUED ON PAGE 198

KEEP IT HOT

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RAPIDASE®

Continuous high temperature de-sizing has been adopted by virtually every large dyer and finisher in the country. The majority of these use RAPIDASE. One reason is that of all enzyme de-sizing preparations, RAPIDASE is most heat resistant and consequently most suitable for the speedier and more economical de-sizing at higher temperature.

WALLERSTEIN COMPANY, INC., 180 MADISON AVENUE, NEW YORK 16, N. Y.

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NEW DYES and CHEMICALS

Water Repellents

Drusil . . . a line of silicone finishes applicable to rayon, Orlon, Dacron, acetate, and wool provides a variety of finishes from very soft to thick and leathery. Finishes are durable to dry cleaning and laundering, and curing temperatures are so low as to prevent cloth damage. E. F. Drew & Co., Boonton, N. J.

Circle D-1 on Reader-Service Card

Substantive Softeners

Wica Softener T-535 . . . for resin baths; compatible with most finishing materials. A cationic material with good stability over a wide pH range.
Wica Softener A . . . a 50% active anionic softener used in resin baths containing metallic-salt catalysts.
Wica Softener N . . . a 50% active general-purpose neutral softener. Wica Chemicals, P. O. Box 506, Charlotte, N. C.

Circle D-2 on Reader-Service Card

Laboratory Reagents

Spectranalyzed Reagents . . . offered as ultra-pure chemicals for spectrophotometric work. Each bottle labeled with facsimile of actual spectrophotometer curve. Acetone, carbon tetrachloride, chloroform, cyclohexane, methyl alcohol, methylene chloride, and isopropyl alcohol are available. Fisher Scientific, 717 Forbes St., Pittsburgh 19, Pa.

Circle D-3 on Reader-Service Card

Nonionic Surfactants

Pluronics . . . a series of dye-leveling agents effective on all fibers. Compatible with oils, soaps, and other textile-processing materials throughout the entire pH range, these products do not combine with calcium and magnesium salts and have excellent detergent qualities. Foaming characteristics range from very low to moderate. Supplied in three types. Wyandotte Chemicals Corp., Wyandotte, Mich.

Circle D-4 on Reader Service Card

High-Glaze Finish

Calen-Aid (tex) D-22 . . . a colloidal silicone, wax, and resin finishing agent for producing high-gloss finishes on resinated and embossed fabrics. Can be added directly to resin-finish formulas and used as a softener for noncalendered finishes. Textile Adjuncts Corp., 876 Pacific St., Brooklyn 38, N. Y.

Circle D-5 on Reader-Service Card

Resin Deodorant

Poly-Coupler . . . a resin copolymer to be added to urea- or melamine-formaldehyde resins. When cured with the resin, prevents formation of amine compounds that develop odors. Compatible with all resins and fibers. Textile Adjuncts Corp., 876 Pacific St., Brooklyn 38, N. Y.

Circle D-6 on Reader-Service Card

Stabilized Azoic Dyestuffs

Neutrazoics . . . stabilized azoic dyestuffs that develop full shades without acid-ageing. A range of shades fast to washing, chlorine, and light is available. Neutral steam will develop the colors, but acid-agers can be used if desired with very considerable savings in time. Atlantic Chemical Corp., 153 Prospect St., Passaic, N. J.

Circle D-7 on Reader-Service Card

Deodorant Emulsifier-Coupler

Witco 77-86 . . . an emulsifier-coupler for polyurethane foams that leaves the products free from odor. Applicable to foams going into auto mats, upholstery, carpets, and wearing apparel. Witco Chemical Co., 122 E. 42nd St., New York 17, N. Y.

Circle D-8 on Reader-Service Card

Decomine—a New Dyeing Assistant for Acrilan-Wool Blends

A new dyeing assistant useful in dyeing Acrilan-wool blends has been developed by Arkansas Co., Newark, N. J.

The product is a blend of cationic and nonionic materials that helps produce dyeings of excellent uniformity and color value. Decomine is neutral in reaction and will withstand boiling in the presence of sulfuric acid at all working concentrations.

Decomine is added to the dyebath at the rate of 1 to 4%, based on the weight of the goods. The lower amount is satisfactory for pastel shades, the percentage increasing with the depth of shade.

Sulfuric acid at the rate of 4 to 8% owg. must also be added to the dyebath; and if metallized neutral dyes are used, ammonium sulfate should be included in the formula.

Usually the Decomine is added to the dyebath first and the goods worked 10 to 15 mins. at 100 to 120° F. Then the dyes (and ammonium sulfate if necessary) are added and dyeing proceeds at the boil, with the addition of the necessary amounts of sulfuric acid.

In some cases when dark shades are to be produced with metallized neutral dyes, the Decomine is added only after the dye has been exhausted onto the wool. Continued boiling will then produce good unions. A thorough rinse in warm water should follow dyeing.

To insure a good degree of crockfastness, a light scour with 1% owg. of a nonionic detergent plus 2% owg. of ammonia at 120° F. for 15 mins. is recommended after dyeing.

Successful dyeing of Acrilan-wool blends by the one-bath method outlined here depends greatly on the selection of dyes that will transfer well in a minimum length of time. Several classes of dyes are suitable, but all dyes in these classes do not work equally well.

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LONGER LIFE. For years AlSiMag guides in various materials have set long life records. Hard. Homogeneous. Highly resistant to wear.

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AlSiMag's wider range of versatile materials permits selection of the **right** composition for every guide application! Over half a century's "know how" devoted to each order.

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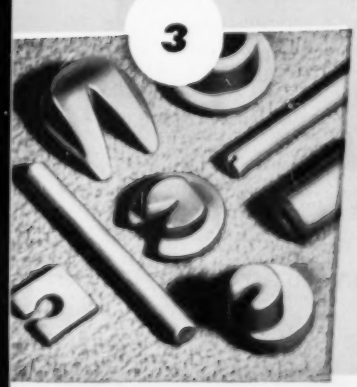

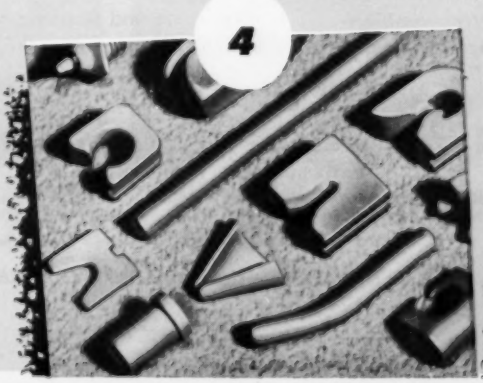

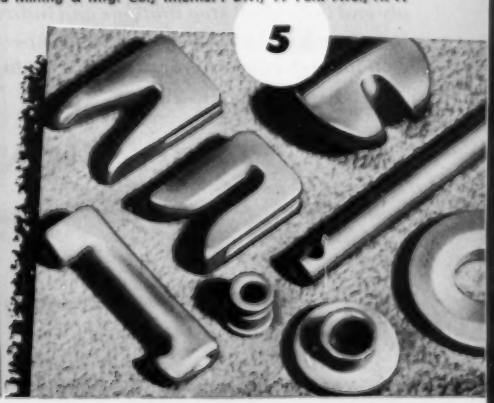

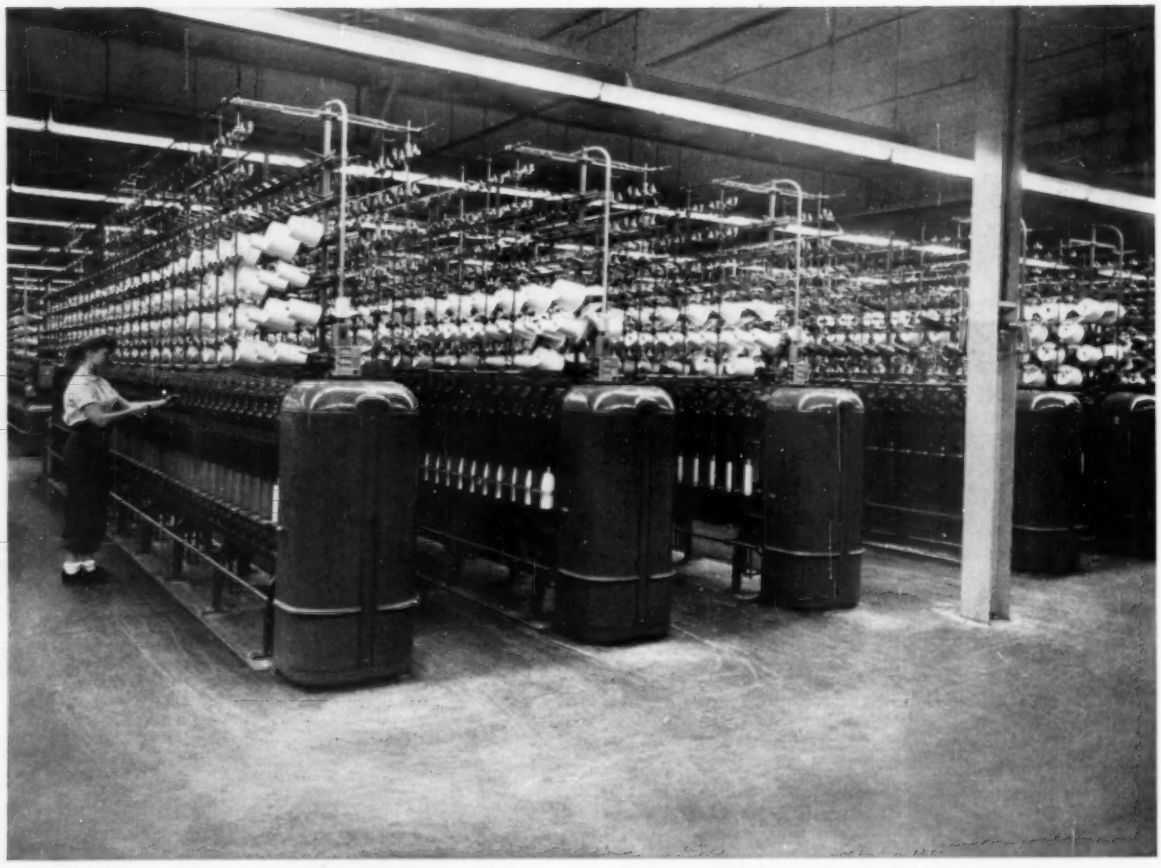

Leesona Model 10 Ring Twisters at the Chatham Manufacturing Company mill in Elkin, N. C. Part of a Leesona 2600-spindle installation used in producing the famous Chatham automotive and apparel fabrics.

Why CHATHAM selected Leesona® Ring Twisters

Mill executive tells how Model 10 machines help maintain quality and cut production costs

Carlyle Summey, Worsted Division Manager at Chatham, says:

"Our fabrics require many combinations of yarns — natural, synthetic and metallic, in ply constructions of from 2 to 6 ends. Leesona Model 10 Ring Twisters do a great job of top-quality twisting for us. Their single and ply end individual stop motions and individual tensioning of each end in the creel make the perfect combination for high efficiency twisting. We get big, well formed take-up packages from our Model 10's — and we get them fast, which saves us time and money in our subsequent coning, quilling and warping operations.

Investigate Leesona Machines

Get *all* the facts. Find out how Model 10 Ring Twisters, or other Leesona Machines, can cut your operating costs and improve your product quality. See your Universal representative or write direct.

23.5.20

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QUESTIONS and ANSWERS

▶TEXTILE WORLD'S editors are at your service to help solve your problems in yarn manufacture, weaving, knitting, dyeing, finishing, or other textile operations. If you have a technical problem bothering you, send it along to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

How To Make Absorbent Cotton

Technical Editor:

How is absorbent cotton made? (9928)

There are two types of absorbent cotton; sterile and nonsterile cotton. Sterile cotton is made from purified virgin cotton where at least 60% by weight of the fibers are not less than 12.5 millimeters long. The cotton should not retain less than 24 times its weight of water after immersion for 10 secs. Sterile cotton is packaged in wrapped rolls and sterilized by high-pressure steam.

Nonsterile cotton is made from purified new or reworked cotton from comber or card strips; it is fully bleached and contains no linters from reworked yarns, threads, or fabrics. At least 40% by weight of the fibers are 12.5 millimeters long. The cotton retains not less than 20 times its weight of water after immersion. Nonsterile cotton is purified but not sterilized.

Trash is removed in the usual opening processes. Other impurities are removed by air separation. The cotton is then wetted out with a hot solution of 3.5% sodium hydroxide and washed six times with water.

The purified fibers, free from natural oils, fats, and waxes, are bleached and washed again. After passing on a moving screen through long drying ovens, the cotton enters a lapping machine where beaters tear the cotton into small pieces while grid bars eliminate the short fibers and more foreign matter.

Rollers press the cotton in a continuous lap, which is fed to a card to form a web. Usually 23 webs from the card form the roll of absorbent cotton.

Two Ways To Increase Lickerin Speeds

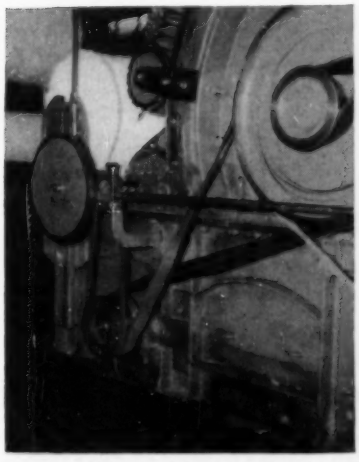
Technical Editor:

We have read the recent articles in TEXTILE WORLD about improved carding. The basic change to the card is the high-speed lickerin, but you have not explained how to get the increased speed without the use of an individual motor drive for the lickerin. Can we make the change without an individual drive? (9889)

Many cards are run with high lickerin speeds without individual drives. Here are the two methods that are used in mills:

1. The diameter of the lickerin pulley is reduced and the lickerin is driven directly from the cylinder. Slippage is reduced by using cork or leather inserts in the face of the pulley. Endless belts of the correct length are used in some mills. Avoid rigid metal belt fasteners because the belt at this joint cannot conform to the small diameter of the pulley.

2. The lickerin and doffer are driven from a jack shaft. This method is the best solution to the problem. The jack-shaft arrangement consists of two individual shafts or one long shaft to which the pulleys are fastened on each side. This shaft extends through the machine beneath the lickerin. The revolving shaft in the latter arrangement is covered with a steel pipe to prevent waste collecting on the shaft.



JACK SHAFT below lickerin on right side of card enables lickerin to be driven at high speeds.

LICKERIN jack shaft on left side of card drives the doffer. V-belts are used on the lickerin drive.

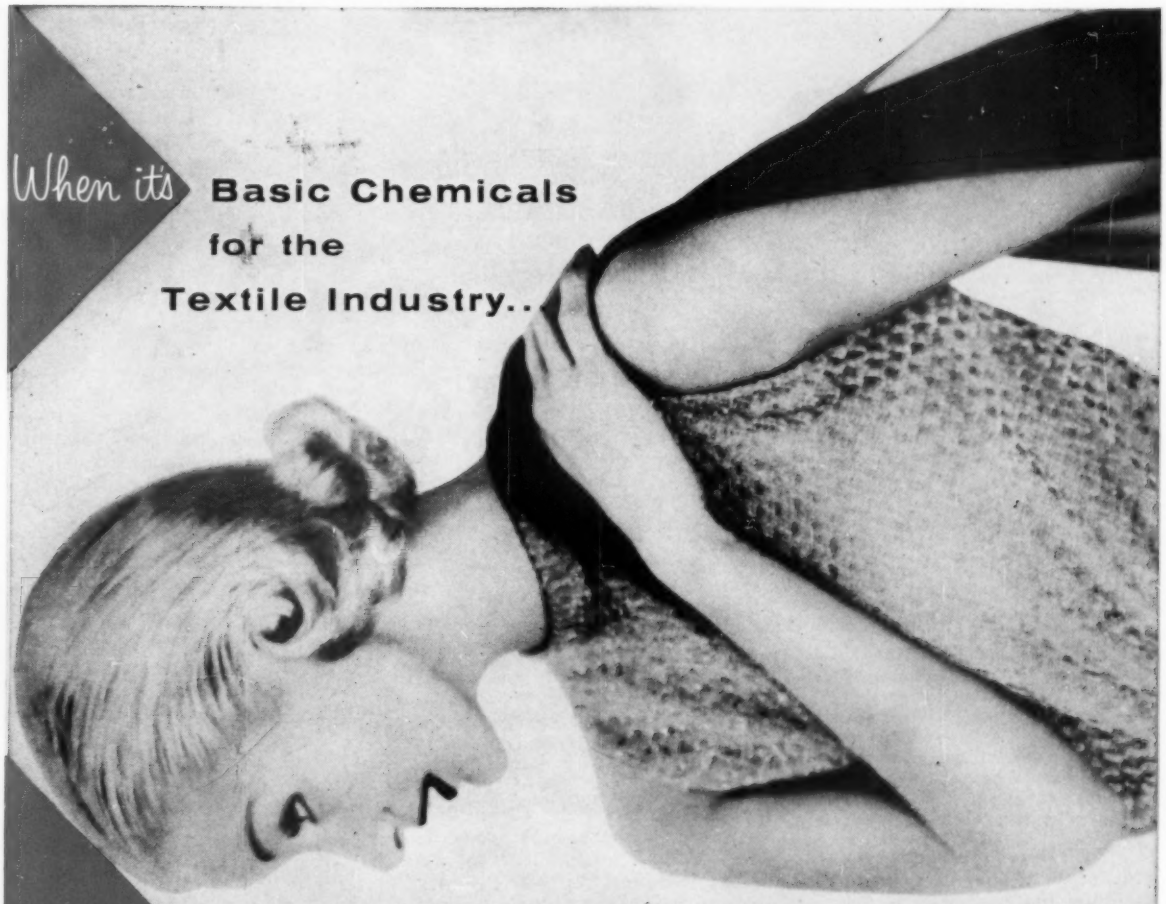
Best Conditions For Knitting Socks

Technical Editor:

What are the recommended humidities for knitting cotton, nylon, and rayon socks? (9941)

Cotton knits best on circular hosiery machines with the temperature at 80° F. and the humidity about 70% r.h. Nylon does not require such high humidity and will run well at the same temperature and 60% r.h. Rayon will run satisfactorily at 65% r.h.

When it's **Basic Chemicals for the Textile Industry..**



Harper's Bazaar Photograph

... specify **GENERAL CHEMICAL**

BLEACHING
Sodium Silicate
Tetrasodium Pyrophosphate
Oxalic Acid
Sodium Bisulfite, Anhydrous
Hydrochloric Acid (Muriatic)

CARBONIZING
Sulfuric Acid
Aluminum Chloride, solution

RAYON MANUFACTURE
Sulfuric Acid
Hydrochloric Acid
Sodium Sulfite
Sodium Bisulfite, Anhy.
Glauber's Salt, Anhy.
Sodium Sulfate
Epsom Salt

DESIZING
Sulfuric Acid

DETERGENT
Disodium Phosphate, Anhydrous
Trisodium Phosphate
Tetrasodium Pyrophosphate
Sodium Tripolyphosphate
Sodium Silicate
Sodium Metasilicate

DYEING
Glauber's Salt, Crystal & Anhy.
Sodium Sulfate
Acetic Acid
Sulfuric Acid
Hydrochloric Acid
Aqua Ammonia
Oxalic Acid

SOURING
Sulfuric Acid
Hydrochloric Acid
Acetic Acid

OTHER USES
Sodium Thiosulfate
Nitre Cake
Aluminum Sulfate
Ammonium Alum
Potassium (Potash) Alum
Ammonium Sulfate
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How To Calculate Neps

Technical Editor:

Why and when are the three terms, neps per 100 sq. ins., neps per grain, and neps per gram used? What are the relative values of each term, and how can they be converted from one term to another? (9931)

Neps per gram is the term most used in laboratories to express the number of neps in a selected one-gram specimen. Neps per grain is the favorite mill method, because one gram is considered too large a unit where many specimens have to be counted on a regular nep-count schedule. Multiples of one grain may be taken if one grain is insufficient.

The area of the mat used to measure neps per 100 sq. ins. is usually a fractional part of 100 sq. ins. Counts made on card webs that may differ in weight per yard of sliver are not directly comparable.

For example, in comparing 60-grain sliver web with 40-grain web there is a 50% greater weight of stock in the same area. Counts should be converted to neps per grain for a fair comparison.

$$\text{Neps per grain} = \frac{\text{neps per gram}}{15.43}$$

Neps per gram = neps per grain x 15.43

$$\text{Neps per grain} = \frac{\text{neps per 100 sq. ins.}}{0.0694 \times \text{grains per yd. sliver}}$$

Neps per 100 sq. ins. = neps per grain x 0.0694 x grains per yd. sliver

1-yd. card sliver (40-in. card) = 1,440 sq. ins. web.

100 sq. ins. web = 0.0694 sq. yd. web

Loom Take-Up Rolls Cause Thick and Thin Places

Technical Editor:

We have a lot of thick and thin places in our filament-rayon cloth. Do the take-up-roll cover and press-roll cover affect these places? (9927)

Thick places in the cloth are usually caused by worn studs or worn gears in the gear train. A badly worn part causes thick places. Parts that are worn only slightly result in set marks.

Thin places are not made by worn parts in the gear train. When a loom is started, it has to run several picks before the lost motion is taken up. During that time, the cloth is not moving around the take-up roller but is beating back at the fell of the cloth to form a thick place.

Thin places from worn take-up motions are caused when the filling in the loom breaks in such a way that the weaver has to reset the pick gear. Then the worn gear train cannot be reset accurately, and a thick place or a thin place results.

These thick and thin places are made even if the take-up-roll cover and press-roll cover are in perfect condition and are operating properly. But if either of the roll covers is worn, the cloth slips back and makes thick places.

To compensate for worn covers, loomfixers often tighten the press-roll tension screw. Then any lost motion in the take-up gear train becomes extremely critical, and a weaver has no control in resetting the pick gear when resetting is necessary. Thin and thick places follow. In addition, wavy cloth and bad set marks are made.

Thick and thin places can be caused by the worn covering itself or by a combination of worn gears and worn coverings. If either covering is worn, the cloth will slip on the take-up roll at the press roll when the loom is running and wavy cloth results. This wavy cloth is simply a series of thick places.

Excessive thick places are made at loom stops because the cloth slips when the loom is restarted. Thin places are caused at filling breaks when the pick gear has to be reset because the weaver can't control the letting back of the cloth.

GREAT NAMES

in the textile industry

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The Wm. Powell Company, Cincinnati 22, Ohio . . . 110th YEAR

PERFORMANCE PV VERIFIED

FIG. 1793—Iron Body Bronze Mounted O. S. & Y. Gate Valve for 125 Pounds W.S.P.

FIG. 2608—Bronze Full Flow Globe Valve for 200 Pounds W.S.P.

FIG. 2491—Stainless Steel O.S. & Y. Gate Valve for 150 Pounds W.P.

POWELL VALVES

BRONZE, IRON, STEEL AND CORROSION RESISTANT VALVES.

KINKS and SHORT-CUTS

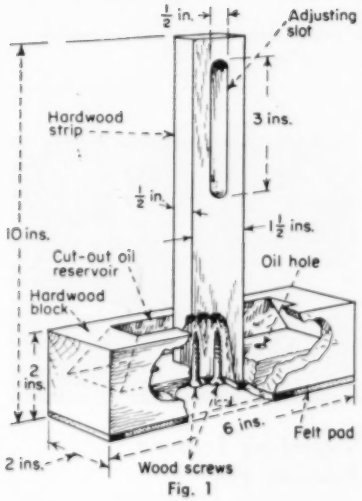


Fig. 1

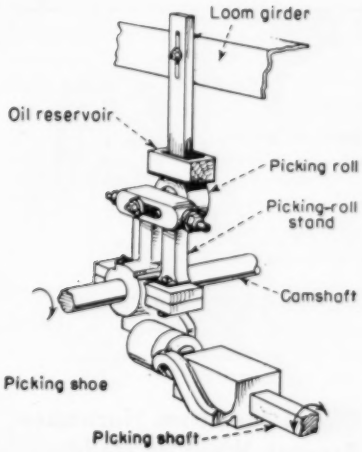


Fig. 2

Oiler for Loom Roll Eliminates Daily Oiling

The picking-motion parts on our Crompton & Knowles looms wear rapidly if we don't keep them lubricated correctly. Correct lubrication at our mill calls for oiling the picking rolls each day. We used to have an oiler oil the rolls the first thing every morning. As a result, our oiling costs were high.

We have made a little gadget that oils the picking rolls automatically. The automatic oiler is made from a strip of hardwood, a hardwood block, and a piece of felt loom-mounting pad.

The wood block is 2 ins. square and 6 ins. long. The inside section of the block is chiseled out to form an oil reservoir. Three holes ⅛ in. in diameter are bored off center in the bottom of the block for oil feeders. Two ⅞-in. holes are bored in the bottom of the block directly on center.

The strip of hardwood is 1½ ins. wide, ½ in. thick and 9 ins. long. A ¼-in. slot 3 ins. long is cut lengthwise of the wood 1 in. from one end. The other end of the wooden strip is screwed upright in the center of the oil reservoir in the block at the position of the two center holes.

The felt mounting pad is nailed to the bottom of the hardwood block, as shown in the complete assembly in Fig. 1.

The upright strip of wood is bolted to the lengthwise loom girder over the picking roll. The slotted section of the strip is adjusted so that the picking roll tips the felt gently as the roll stand revolves with the loom camshaft. (Fig. 2).

The reservoir is filled with oil. The oil seeps down through the three holes bored in the bottom of the block and saturates the felt. Each time the picking roll strikes the felt, a thin coat of oil is placed on the roll. Then the roll lubricates the picking shoe, and consequently there is no wear to either part.

We have placed these oilers on all our looms. In addition to the reduction in parts wear, we have cut out most of our oiling costs. We refill the reservoir only about every two weeks with the oil we use for regular loom oiling. (K-2758) *Leo A. Bouvier, Pawtucket, R. I.*

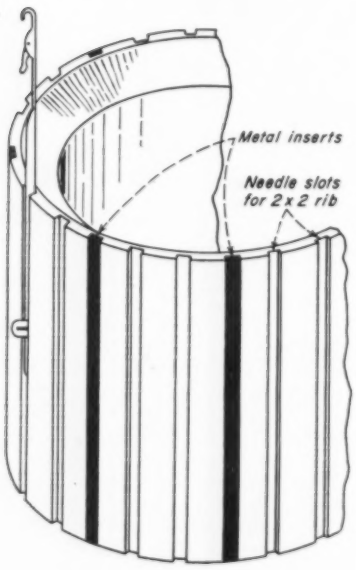
How To Test for Tar-Stained Cotton

Cotton stained with tar from contaminated bale coverings or truck beds presented a serious problem until we developed a method of testing for tarred cotton. Once a day, we spot-check several bales in the opening room this way:

We pour a nonflammable solvent on several high-grade filter papers about 1 ft. in diameter and place the wet paper against the ends of several bales chosen at random. The paper is allowed to cling to the bales for about 5 mins.

Then we remove the paper, take it to our cotton-testing laboratory, and examine it under ultraviolet light. Tar transferred to the filter paper fluoresces with a halo effect; a brown center appears to dissolve into a round bright area. When we find significant tar traces, we instruct the man in the opening room to thoroughly sweep off the ends of the bales.

Since we adopted this testing system, we haven't had a single complaint about tar-stained yarns or fabrics. The filter paper is also an excellent record to present to the shipper when a lot is badly tarred. (K-2833)



Strengthen Cylinder Slots With Metal Inserts

Many knitted underwear fabrics are made in 2x2 rib. This fabric is made with every third needle removed from its slot. Panel fabrics are also made by removing needles from the cylinder or dial, or both.

Needles serve to strengthen the slot walls, especially on fine-gauge machines; so when they are removed, the slots are weakened. Smashes do more damage to cylinders and dials where the needles have been removed.

To reduce the damage when a smash occurs, you can use an insert in the empty slot in place of a needle. The inserts are made to the width of the slot but must not be too thin, or they will work loose and may do damage. Don't make them too tight as they may have to be removed if you change to another fabric construction.

If the inserts fit the slot at the top and the bottom snugly, they will prevent dirt and lint accumulations. The inserts must not be too broad or they will touch the cams. (K-2799)

Best-Kink Award for November

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

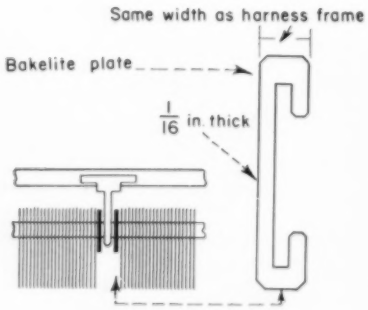
If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for November, according to TEXTILE WORLD reader-judges, was:

"We Stopped Filling from Turning in Magazines"

By Bernard Dixon, Providence, N. C.

Mr. Dixon is being sent a check for $25 with the compliments of TEXTILE WORLD.



Plates for Loom Harnesses Prevent Wear at Heddles

Uneven harness movement used to wear the heddles of the harnesses on our looms. We eliminated this wear by inserting small Bakelite plates between the anchor hooks for the ribs and the heddles.

The Bakelite plates are about $\frac{1}{16}$ in. thick and are shaped so that they snap on the harness ribs. The plates slide sideways with the harnesses and prevent wear to the anchor hooks and heddles.

We formerly had to remove our harnesses from the loom every six months to repair them. Now they run for a full year between repairs. (K-2617) *Carl E. Popper, Kfar Ata, Israel*

Vibrating Screens Remove Lint

A tufted-carpet dyehouse in Georgia had the problem of keeping lint out of dyehouse effluent. The city sewage-disposal system couldn't handle the large amounts of cotton and rayon fiber that result from dyeing tufted carpets.

So the dyehouse set up a vibrating-screen system at the outfall of the dyehouse drains. Waste water and lint flow over the screens, and the lint is held back.

The screens are set at about a 10° pitch from horizontal. This setting causes the lint to work toward the lower edge of the screens and fall off into a pit, from which it is carried away periodically. (K-2795)

Don't Oil Machines When They Are Cold

Knitting machines require an exact amount of oil to keep them producing in tip-top shape. Many knitters and fixers overlubricate their machines. Dirty fabric and goods result, and oil costs are high. However, a greater fault is in oiling a machine when it is cold.

Some knitters make a practice of oiling machines first thing in the morning. The metal is still cold; and if an excess of oil accumulates in enclosed spaces, metal breakage may occur when the machine is run.

To avoid breakage caused by metal expansion, machines should be run for 30 mins. in the morning before they are lubricated. (K-2798)

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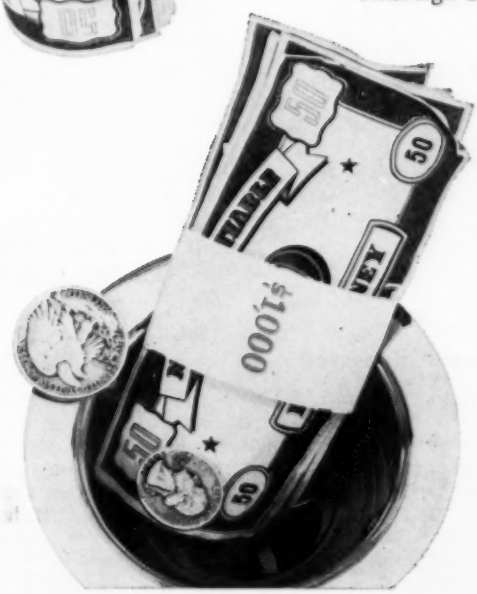
Savings also are often possible with customers who buy solid and flake caustic.

The important thing is to do something about it now. It will cost you nothing to find out. Our Technical Service Department will be glad to assign one of its specialists to discuss your individual case, to make recommendations and to estimate your annual savings.

Write today to our Caustic Soda Department at the Pittsburgh Office.



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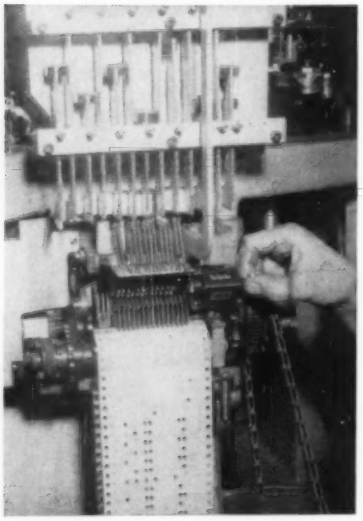


Sweater Counter Saves Time and Waste

The problem of oddments left over from sweater orders has been simplified with Veeder-Root counters screwed to the knitting-machine frames over the control card.

The lever on the counter is positioned over the last lever on the selector mechanism. One hole is punched in the last row of each card at the end of the garment cycle.

When the pin drops into the hole, the lever pushes up the counter lever and changes the figure on the counter.

When the knitter receives an order, he sets the counter to the number of garments the order calls for. Several times daily, the knitter examines the fabric and removes twelve garments, which are bundled for cutting or finishing.

When the complete order has been knitted and the figures on the counter reach zero, the machine stops because the counter is wired to the stop-motion circuit. The machine cannot be restarted until the knitter resets the counter for a new order.

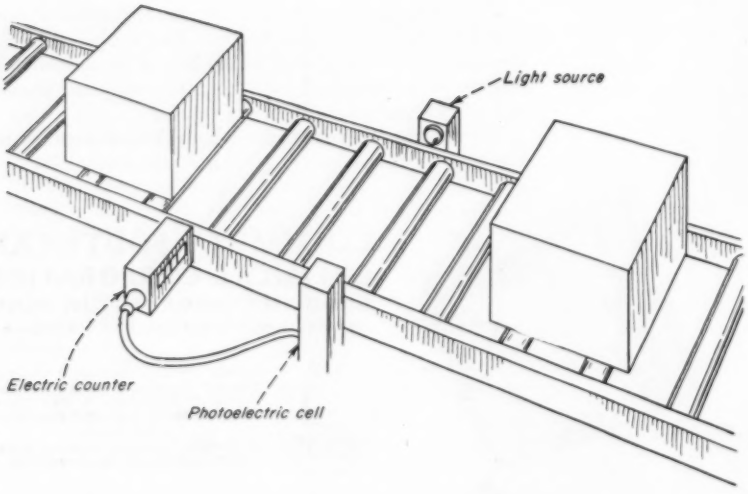
Resetting the counter is much less work than keeping a record of the goods knitted, and mistakes have been reduced. (K-2796)

[*Jacquard Knitting Machine Co. is now installing counters as standard equipment on its machines.*—EDITOR]

How To Streamline Cloth-Baling Operations

We are saving time in our cloth room by tucking the ends of the bale bagging under the outside steel ties. Formerly, we sewed the ends in the conventional manner.

We find also that three ¾-in. steel straps make as secure a bale as the five ½-in. straps previously used. This streamlined operation makes a satisfactory package; and we save up to 15 mins. per bale over the old method. (K-2731) *U. S. Rubber Co., Winnsboro, S. C.*

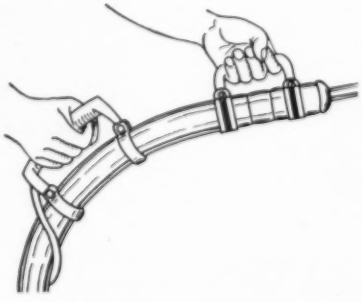


Photoelectric Device Counts Cases Received

As a precaution in our receiving department, we double-check our receiving records by physically counting the total number of cases of yarn received. We found that a photoelectric cell connected to an electric counter is excellent for this job because it requires a minimum number of attachments and avoids human error.

The photoelectric cell is attached to the conveyor on which the cases travel; as a passing case interrupts the light beam, the counter adds a number.

The system, plus spot-weighing of yarn cases, has been a great help to the office and the receiving department in keeping the records straight. (K-2804)



Steam-Hose Handles Increase Safety

Two handles near the end of a steam hose permit improved control and safer operation. The rear handle, made of aluminum, is equipped with a trigger connected to a 6-v. relay box. The relay activates an air-solenoid valve that in turn operates a diaphragm and allows the steam to pass through a control valve to the hose. The front handle is used to direct the steam. Leather gloves are recommended for prolonged use. (K-2805) *Gadgets*

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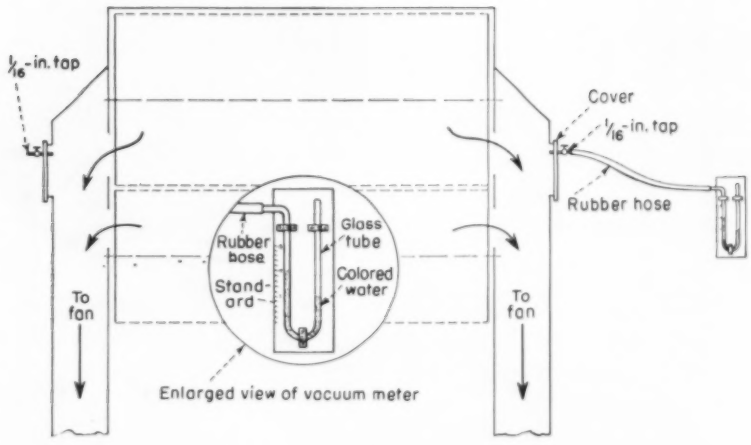

Check Picker Vacuum With Homemade Meter

To make a good picker lap, the suction from the fans must be the same on both sides of the picker. When the fan ducts get dirty, or if the fan does not ride in the middle of its housing, the suction becomes heavier on one side and causes an uneven lap.

An easy way to check the strength of the vacuum and at the same time compare the two sides for variation is to make a vacuum meter, as illustrated.

Make the meter from a U-shape piece of glass tubing mounted on a wooden block marked with a graduated scale. Distance between the gradations is arbitrarily selected for the convenience of the user. Then partially fill the glass tube with colored water and attach a rubber tube to one end.

Next, drill a small hole (⅛-in. dia. is enough) through the covers over the fan-duct openings on each side of the picker. Insert in these holes small taps that can be closed when not in use.

When you want to check the vacuum, place the rubber tube over the nozzle, open the tap, and make your reading. Repeat the procedure on the other side of the picker; compare your readings with each other and with a standard made when the ducts are clean and the fan is working properly.

This arrangement is suitable for any machine having a cage suction with fan ducts. The taps, being small, do not interfere with removal of the covers for cleaning. (K-2838) *Harry H. Rentel, Brazil*

Use Screen To Knit Dark-Colored Yarns

When dark-colored yarn is knitted on multifeed machines, the yarn is often difficult to see if the ceiling is also dark. The yarn may be threaded incorrectly, and seconds or press-offs often result.

To overcome this problem, we mounted a 3-ft. square plywood board over the machine about 4 ins. above the top stop motion. The board is painted white to reflect light, the yarns are much easier to check and the board helps keep lint off the machine. (K-2824) *Wm. Scott, Enfield, England.*

$500 for Best Kink in 1956

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We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it; we will pay you extra if you do and we can use it.

We like ideas for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

$25 for Best Kink Each Month

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1956.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

Send Kinks to:
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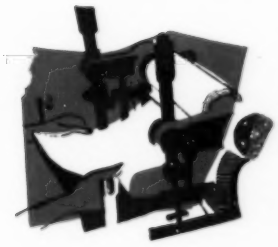
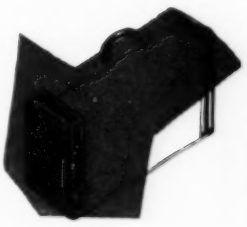
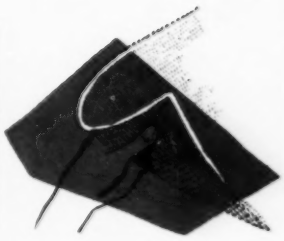


for paper treatment?

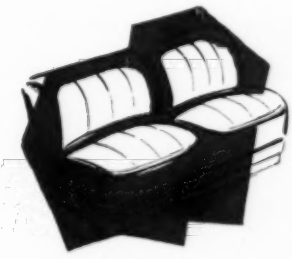


for leather finishing?

for water-based paints?



for rug backing?



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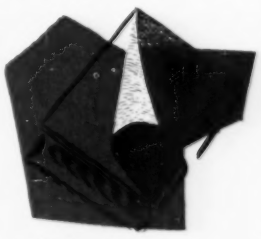
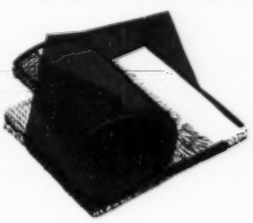
Have you tried a NAUGATUCK LATEX or LOTOL?



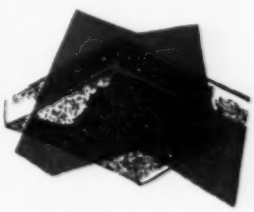
for bonding wood, leather, fiber?

for dipped products?



for binding flooring, cushioning?

for pressure-sensitive tapes?



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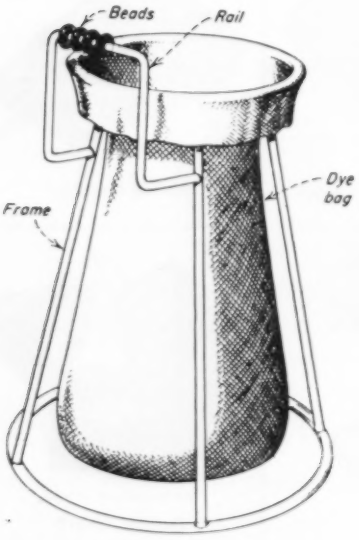


Hosiery Counting Is Made Easier

We examine our stockings in the gray on an expanding form, which is fitted with a counter for counting individual stockings up to 1 doz.

The stockings, after inspection, are dropped into a bag for Dunn-system processing. There are 2, 3, or 4 doz. stockings placed in the bag, according to the construction and size of the stocking.

To help us keep track of the correct number of stockings in each bag, we have a ¼-in. rail welded to the bag-holding frame. Four wooden beads are threaded on the rail.

At the start of the inspecting process, the beads are pushed to one end of the rail. At the finish of each dozen, a bead is moved along the rail until the correct number of dozens are counted. (K-2759)

[*Automatic counters are now made specially for this type of work. One set of figures counts the dozens up to 100, and another set counts up to 24. The operating lever may be moved by foot or by hand.*—EDITOR]

Peg Pattern Chains Fast On This Shop-Made Table

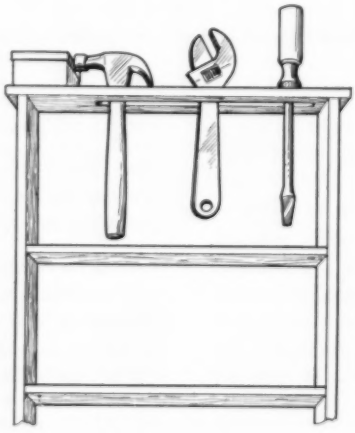
We have used several different kinds of devices to peg pattern chains for dobbies, but the table shown in the picture is the best device we've found.

The table was made in our mill carpenter shop from a few pieces of scrap lumber and discarded loom parts. The table top is built much like a common gable roof. The front slope of the table lets pattern chains move up easily; the back slope lets the chain fall by gravity.

Two discarded pattern-chain cylinders are mounted at the top of the table and are locked together so that they turn together. A cam-loom treadle roll, held in a short bearing, fits in the concave surfaces of the handwheel on the cylinder shaft. The treadle roll is held in place with a harness pull-down spring. Another handwheel at the outside end of the other shaft is used to turn the shaft. The treadle roll acts as a brake, but the shaft can be turned easily.

To use the table, the operator mounts a chain pegged correctly on the left-hand pattern-chain cylinder. He mounts a blank chain on the right-hand cylinder. Then he pegs the right-hand chain to match the correct chain on the left. As the bars are pegged, he turns the handwheel to move both chains to the proper working position.

The table is also used to check a chain when a peg is missing or in the wrong position. When a master chain is not available, a chain draft is placed in a holder on the table. The holder is slotted to show only one bar of the draft at a time. As the chain is pegged, the draft is pulled up to show the next bar design. (K-2663) *Wilmer C. Westbrook, Trion, Ga.*



Slot in Top of Ladder Keeps Tools in Place

A slot in the top of a ladder adds much to its efficiency by safely holding the tools you use most while at the top. It is also a good idea to attach a box to the top of the ladder where you can keep small brads, nails, and screws. The box should be covered to keep these items in place when the ladder is being carried. (K-2754) *W. F. Schaphorst, Newark, N. J.*

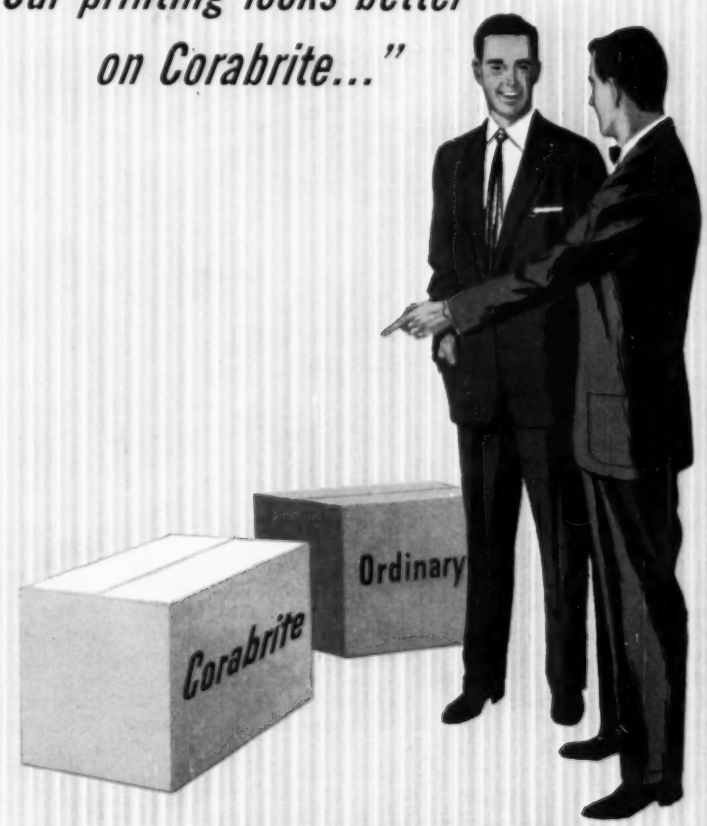
Use a Nail for a Drill To Bore Holes in Shuttles

On shuttles with Paterson eyes, the tension pins vibrate loose in their holes and come out. Then it is necessary to drill another hole for the pin near the old hole.

It's hard for loomfixers to keep small drills for this job since they are easily broken and lost. But a small nail placed in the drill press or hand drill bores as well as a drill.

Use either a finishing nail or a common nail with the head cut off. But be sure the nail is thinner than the tension pin, or the hole will be too large. To make the nail bore easily, sharpen the point. Make several drills at once. (K-2564) *Charles S. Bicksler, Lancaster, Pa.*

"Our printing looks better on Corabrite..."



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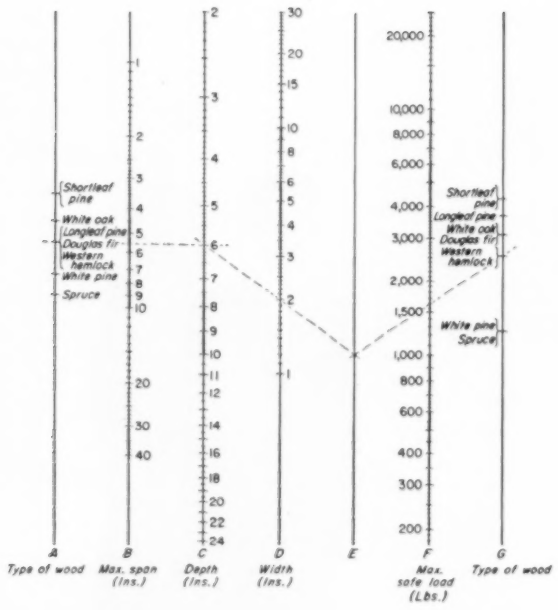
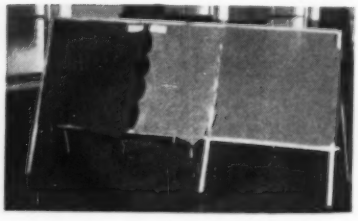


Select Safe Wood Beams With This Chart

Here is a chart that will help mill mechanics quickly select safe beams made from ordinary types of wood. The chart is based on data adopted by the American Railway Engineering Association for safe, uniformly loaded wooden beams of rectangular section.

Suppose you want to hold 200 lbs. per ft. on a 2x6-in. Western hemlock beam over a span of 5 ft. Will the beam be safe? The solution is as follows:

Run a straight line from the point opposite Western hemlock on A to the 6-in. point on C. The intersection with B shows the maximum span to be 5.5 ft. Next, from the intersection on C, run a straight line through the 2-in. point on D. From the point of intersection on E, run a straight line to the Western hemlock point on G. The maximum safe load on F turns out to be 1,600 lbs. The required load is 5 x 200 lbs. = 1,000 lbs.; therefore, the beam is safe. The weight of the beam itself is considered in the load given in F. (K-2778) *W. F. Schaphorst, Newark, N. J.*



Use Curtain Stretchers To Inspect Knitted Fabrics

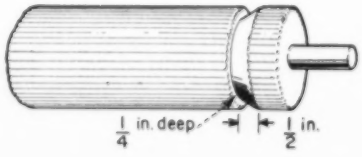
In our yarn mill, we have several knitting machines for making test fabrics. The fabrics are examined for thick or thin places, gouts, and other defects that might result from bad yarn. Also, we check for evenness of dyeing.

We formerly examined these fabrics by stretching them out on a table or by holding them against the window by hand. This method was slow and not too satisfactory.

One of the office girls got a smart idea. She suggested that we stretch the fabrics on old-fashioned curtain stretchers like mother used to use. We bought a set of stretchers from the local department store and tried out her idea. The results were good, and now we have a portable inspecting room that can be stored when not in use—all for less than $2. (K-2847) *Valdese Mfg. Co., Valdese, N. C.*

Here's a Handy Way To Carry Fluorescent Tubes

The illustrated carrier prevents breakage and provides an easy method for transporting fluorescent tubes. It is made of canvas reinforced with metal and leather. A side pocket holds starters and other small parts. A hook is used to place the carrier within easy reach of a man working on a ladder. (K-2782) *Gadgets.*



Take-Up Roller Groove Prevents Soiled Fabric

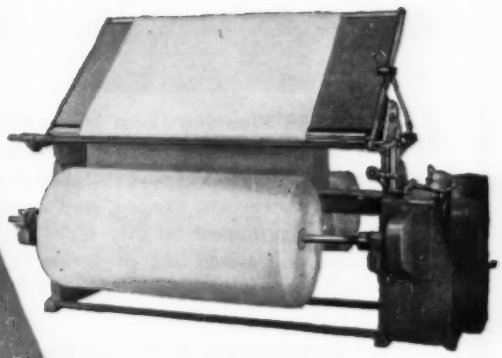
Some of our soiled fabric was traced to oil on the grooves of the take-up roller. The oil had found its way from the take-up drive and had seeped toward the center of the take-up roller.

We prevented this seepage and were able to keep our fabric cleaner by machining a groove around the circumference of the roller at either end. The oil now comes to rest in the groove, from where it can be more easily removed. (K-2771)

YOUR *Quality* FABRICS

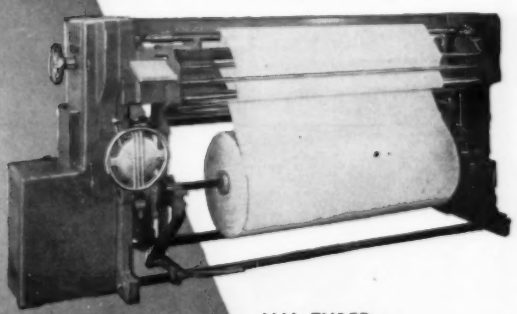
gain in customer acceptance when inspected and packaged on Van Vlaanderen Machines

Fussy customers get a good first impression of your quality fabrics when they are packaged and inspected on Van Vlaanderen machines. Here are three modern machines that make your operators' work easier and more accurate.



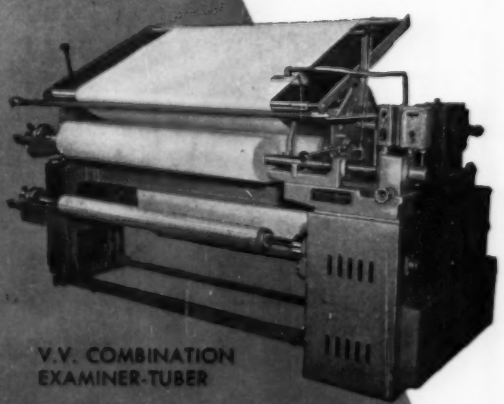
V.V. INSPECTALL

THE V.V. INSPECTALL is built to a sturdiness and precision not before available. Wide-range variable speed control, instantly reversible, one-motion clutch control, and let-off brake are all operated from examing position — giving high operating efficiency. Any fabric, in rolls up to 36", can be examined face or back. Adjustable examining board. Precision clock measures yards and eigths.



V.V. TUBER

THE V.V. TUBER assures accurate measuring and a better package, especially on fabrics that benefit from tensionless processing. The tension is always under operator's control — from near zero tension to medium tension. Constant cloth speed up to 200 Y.P.M., accurate measuring (measuring drum is driven), controlled density of package, simple, effective selvage alignment, easy loading and operating are other important features.



V.V. COMBINATION EXAMINER-TUBER

THE V.V. COMBINATION EXAMINING AND TUBING MACHINE automatically tubes while your operator inspects or he can tube alone. Tubing is better because the automatic selvage guide is quicker in making corrections on all fabrics from sheers to the heaviest duck, plastics or paper. Speed changes from the slowest examining rate to full tubing are easily made through finger tip control, governing a variable speed drive. For rejected yardage (seconds) a supplementary center bar is provided.

Our engineers are anxious to show you these and other Van Vlaanderen machines.

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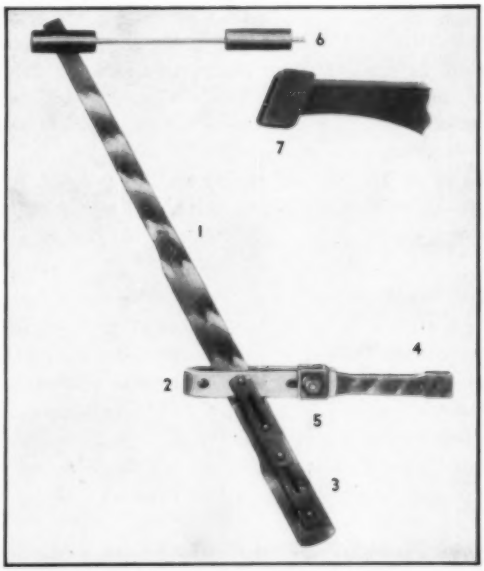
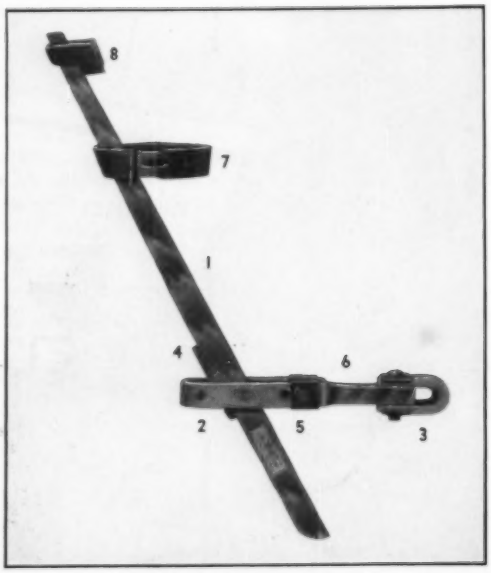
2. Lug Strap
3. Power Adjustor
4. Sweepstick
5. Lug Washer
6. Tubular Spindle Bumper
7. W-Type Bunter





Draper

1. Picker Stick
2. Lug Strap, long
3. Lug Strap, short
4. Holdup Strap
5. Lug Washer
6. Connector
7. Check Strap
8. Loop Picker

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. January, 1956

Outstanding NEW LITERATURE
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NO REPEATS . . . Listed here for January are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

Drawing frame—Incorporates Shirley system of drafting, centralized control. Choice of models for various sizes of cans, gauges, and drafts. Platt Bros. Sales Ltd. (F-1)

High-speed warper—For cotton or synthetics. Carries beams to 31½-in. dia., works at speeds above 600 yds. per min. Franz Miller Maschinenfabrik. (F-2)

High-speed loom—For cotton, runs at 700 ppm. Shuttleless operation, filling supply lasts 48 running hours. Ripamonti Works. (F-3)

Carpet-backing looms—For jute weaving, up to 252-in. reed space. Plain or broken-twill patterns. Urquhart Lindsay & Robertson Ochar Ltd. (F-4)

High-speed tricot machine—For 168-in. goods. 900 courses per min., improved let-off and continuous take-up. Kidde Mfg. Co. (F-5)

Jacquard knitting machine—For circular fabrics. 30-in. cylinder, up to 14 threads per in. 12 knitting feeds, 8 transfer systems. Jacquard Knitting Machine Co., Inc. (F-6)

Seamless-hosiery machine—For plain, mesh, or stretch fabric. Change-over is rapid; electronically controlled. Fidelity Machine Co., Inc. (F-7)

High-speed drawing frame—For cotton and spun-synthetics blends. 300 lbs. per hr. production. 16x42-in. cans. Whitin Machine Works. (F-8)

Fiber blender—Gives improved blending by mixing 30 to 40 layers of fiber. Horizontal layers are cut vertically. 1,300 lbs. per hr. production. American Rieter Co., Inc. (F-9)

Woolen card—For samples. 12-in. working width. Combined with a two-bank tape condenser. Stellite American Corp. (F-10)

AUXILIARY EQUIPMENT

Lint-collector system—For drying machines. Four sizes handling 8,090 to 22,300 cu. ft. per min. Cuts drying time 20 to 30%. Eastern Cyclone. (F-11)

Sock packager—For packaging all types of socks, in single- and double-sock models, in shapes to suit customer. Process Machinery Co. (F-12)

Roving-frame cleaner — Automatic cleaning of all parts of the frame possible. Room cleaner can be attached. Parks-Cramer Co. (F-13)

V-belt-drive manual—For quick selection of constant-speed drives for various purposes; related technical data. Booklet 20P40. Allis-Chalmers Mfg. Co. (F-14)

Vibration mountings—For textile and other heavy machines, in capacities of 500 to 2,500 lbs. per mounting. Cat. No. FP-55. T. R. Finn & Co. (F-15)

Humidifier—For cotton mills. Atomizer type; one model supplies 2 to 16 lbs. of

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NEW LITERATURE Continued

water per hr. on demand of control device. Bulletin 755. Parks-Cramer Co. (F-16)

Humidity controller—For automatic control of atmospheric moisture in mills. Durable electric sensing device with elements for various ranges of humidity. Bulletin 2273. American Instrument Co. (F-17)

Machine mounts—For reducing noise and vibration. Do not generally require cementing; are oil- and water-resistant. Clarke, Cutler, McDermott Co. (F-18)

Continuous yarn tester—Constant-tension devices that check yarn quality continuously in terms of actual useful strength and regularity. Cook & Co., Manchester, Ltd. (F-19)

Air-conditioning units—Reduce soiling, increase production. Bulletin AC 387-8-55. Carrier Corp. (F-20)

ENGINEERING & MAINTENANCE

Rust prevention—For structural steel, protective coating for shipping machinery. Study shows effectiveness by isotope analysis. Rust-Oleum Corp. (F-21)

Metal coatings—For storage tanks, steelwork. Methods include metal, resin coatings for special purposes. Metalweld, Inc. (F-22)

Viscometer — Cone-and-plate-type instrument. Uses 0.5 milliliter sample to check viscosity of sizing and printing pastes. Ferranti Electric Co. (F-23)

Heat exchangers—For heating and cooling liquids; process or steam-plant applications. Cat. No. 1155. Young Radiator Co. (F-24)

Controlled-volume pumps—In capacities from 1.2 to 56 gals. per hr. Maximum working pressure 600 psi. Bulletin H20-1. Milton Roy Co. (F-25)

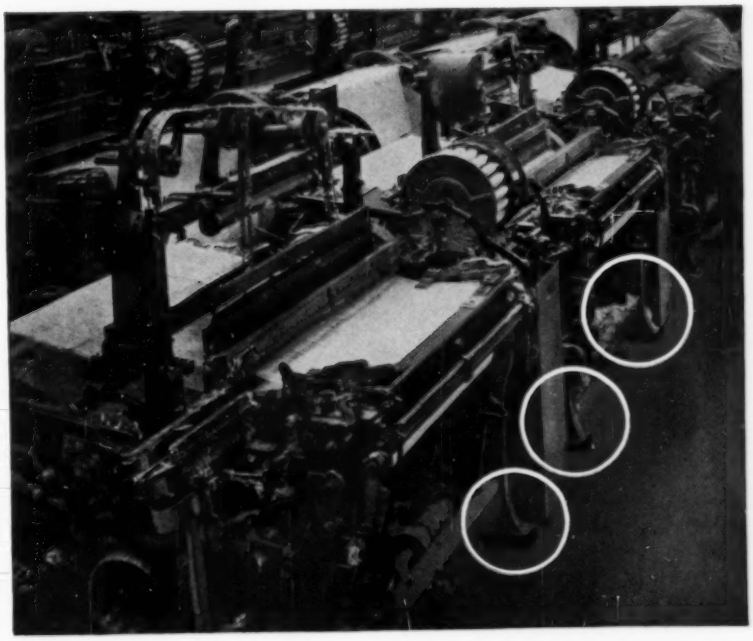
Air-compressor maintenance—Bulletin No. 520-A describes hook-ups, drain traps, accessories for better performance. Sarco Co., Inc. (F-26)

Air compressors—Air-cooled compressors offered in single- and two-stage models. 20 hp. Ingersoll-Rand. (F-27)

Concrete-floor maintenahce—Booklet describing proper methods of curing, preserving, painting new and old floors. National Sanitary Supply Assn., Inc. (F-28)

Top-running overhead cranes—In 2- to 12-ton capacities. Up to 60 ft. span. Also under-running types. Bulletin T-202. Chicago Tramrail Corp. (F-29)

Floors and floor problems—Maintenance of various types of industrial floors discussed in brochure. Tremco Mfg. Co. (F-30)



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NEW LITERATURE Continued

Fractional-hp. drives—Variable-speed thyratron-actuated, dynamic braking. Bulletin ASD-2-1. Machinery Electrification, Inc. **(F-31)**

Control instruments—Pyrometers, potentiometers, thermometers, pressure gauges, flow meters, others described in Cat. 5002. Minneapolis Honeywell Regulator Co., Industrial Div. **(F-32)**

Temperature controllers—For on-off or proportional control; work with various measuring elements. Bulletin 5A-13. Foxboro Co. **(F-33)**

Paint-spraying equipment—Guns, compressors, exhaust equipment. 64-page booklet from DeVilbiss Co. **(F-34)**

Revolving joints—For textile processing operations. Self-aligning, capacities to 250 psi. Rotherm Engineering Co. **(F-35)**

Fluid drives—Rated from 7½ to 800 hp. Speeds to 1,800 rpm. Automatic or manual acceleration control. Bulletin 9419. American Blower Corp., Hydraulic Coupling Div. **(F-36)**

Multi-V-belt drives—Selection, installation, design, maintenance described in 76-page handbook. B. F. Goodrich **(F-37)**

Materials handling and storage — Equipment for the machine shop and maintenance department. Bins, racks, trucks described in Cat. 504. Stackbin Corp. **(F-38)**

Temperature-control systems—Suggestions on selection of proper type, descriptions of several systems. Wheelco Bulletin F6149-2. Barber-Colman Co., Wheelco Instruments Div. **(F-39)**

Capacitors—For utility systems. High- and low-voltage types, automatically switched, indoor and outdoor types. Booklet B-6136. Westinghouse Corp. **(F-40)**

GENERAL

Textile trucks—For warp beams, yarn, dyehouse purposes. Steel, wood, fiber construction. Fisher Mfg. Co. **(F-41)**

Casters and wheels—For light and heavy duty on portable equipment. Information on types and how to select in catalog from Rapids-Standard Co., Inc. Dept. CW-55. **(F-42)**

Warehousing system — Designed to reduce costs, speed up deliveries through automatic electronic control of conveyors. Described in brochure from Walter Kidde Constructors, Inc. **(F-43)**

Roof cooler—For flat roofs. Sprays thin film of water on roofs, reduces load on cooling equipment. Rupprights' Rotary Roof Cooler **(F-44)**

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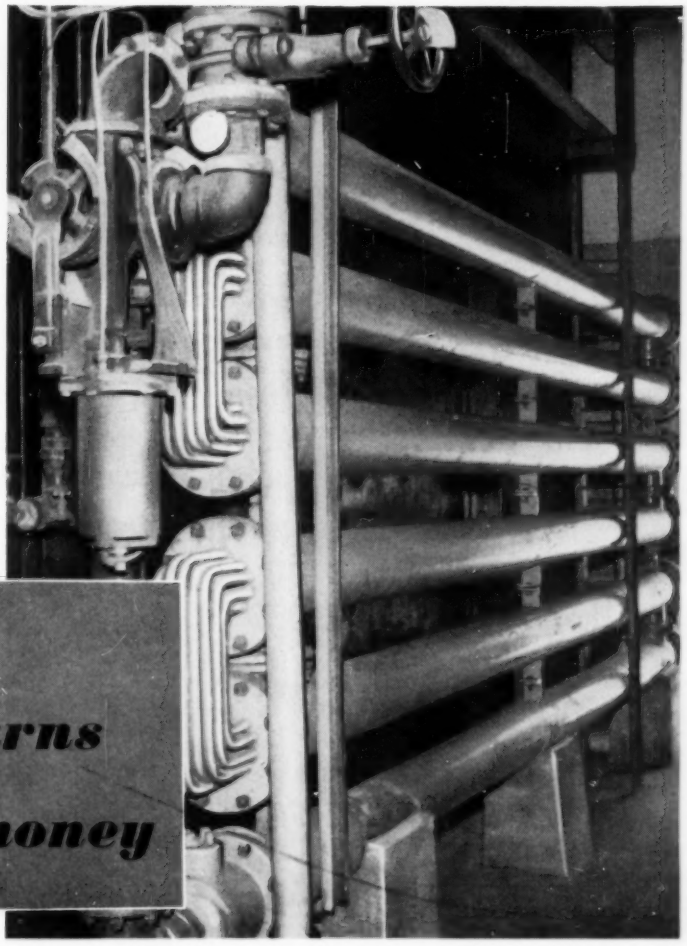

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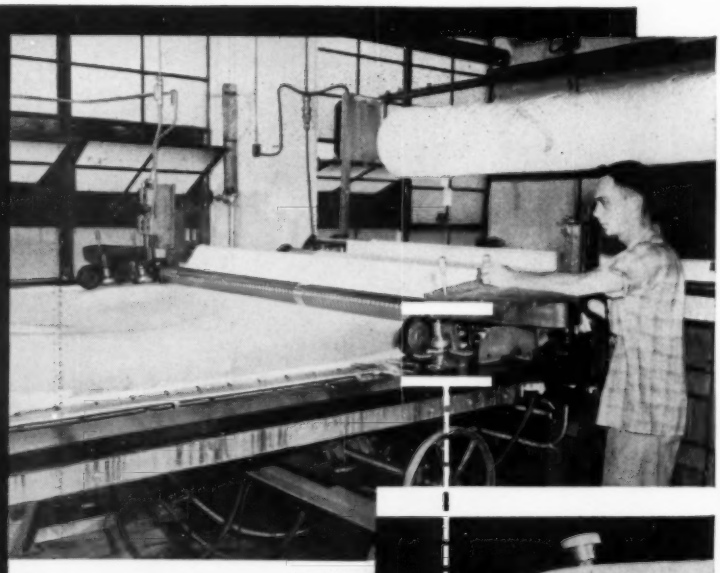

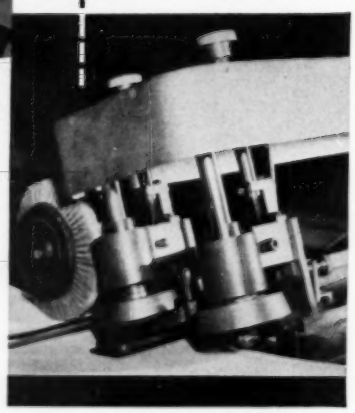

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Increased output from 20-40 yards per minute... a neater more even job than could ever be obtained by custom processing... the release of *one man per frame* for other, more productive work... drastically curtailed maintenance expense—all are the specific results made possible by three automatic ASKANIA Cloth Guide Controls applied to Kingsboro Mills tenter frames.

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The Cloth Guide Control can be used in *any* mill, operating at *any* rate of speed and in the production of *any* type or thickness of material. If you SLIT, POSITION, WIND, TENTER OR EXAMINE, you can save time and earn money by using this 100% automatic watchdog in your mill. There are only three basic units involved in the control operation. The Sensing Nozzle, The Jet-Pipe Regulator and The Hydraulic Work Cylinder. *Your own equipment is the only limit to the amount of run-out which can be corrected.*

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NEW LITERATURE Continued

Tables and data—Chemical and physical data for textile engineers and scientists. 112-page book from United States Testing Co., Inc. (F-45)

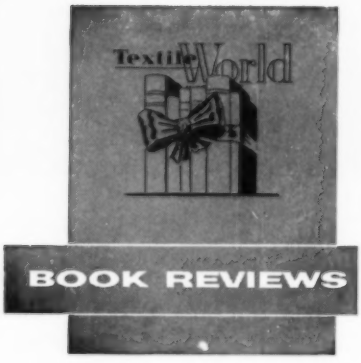
Occupational safety—A service guide for safety engineers. Information on literature and services available. Service Guide 2.1. National Safety Council. (F-46)

LP gas—For industrial truck fuel. Advantages described in bulletin from Towmotor Corp. (F-47)

Pneumatic nail drivers—For crating, other wood structures. Handle nails 2D to 16D with automatic feed, up to 50 per min. Matrix Engineering Corp. (F-48)

Industrial conveyors—Ball-bearing roller type, furnished to user's specifications. Cat. 60A. E. W. Buschman Co. (F-49)

Automatic programming—Simplified methods of obtaining instructions to feed to automatic computers. Remington Rand Inc. (F-50)



HAWLEY'S TECHNICAL SPELLER, by Gessner G. Hawley and Alice W. Hawley; Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y.; 160 pages, $2.95.

This book contains a wide selection of technical words used in several fields. Many troublesome common words used in technical writing and correspondence are included. Recommended word divisions are indicated, and easily confused meanings or spellings are explained in footnotes.

PSYCHOLOGY OF INDUSTRIAL BEHAVIOR, by Henry Clay Smith; McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y.; 425 pages, $6.

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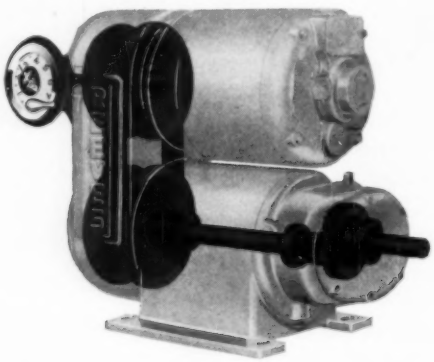

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tive? How can their frustrations and job anxieties be reduced? How can their job satisfaction and personal adjustment be improved? How can industrial leaders create more effective industrial teams, develop better supervisors, and build more productive organizations?

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THE NEW AMERICAN MACHINISTS HANDBOOK, by Rupert LeGrand; McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y.; 1,500 pages, $11.

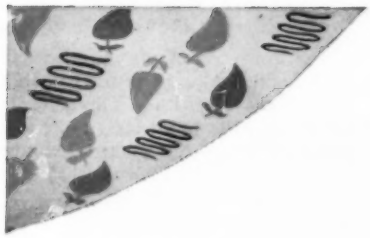
Completely rewritten to represent up-to-date practice in the metalworking field, the ninth edition of this handbook is a convenient-sized encyclopedia of metalworking subjects. It includes information on machining, metal forming, assembly methods, materials, metal finishing, inspection procedure, fastening devices, tool engineering and drafting practice, machine tool standards, and power-transmission equipment.

INSTRUMENTS FOR MEASUREMENT AND CONTROL, by Werner G. Holzbock; Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y.; 371 pages, $10.

Here is a valuable book for everyone concerned with selecting and using control and measurement instruments. In nonmathematical language, the book discusses the design, construction, and operation of instruments; shows how various instruments compare with each other; and points out the facts to consider in choosing the proper instrument for a particular job. The book belongs on the bookshelf somewhere in the modern textile mill.

CENTENARY SOUVENIR VOLUME, by The Indian Textile Journal Ltd., "Surya Mahal," Military Sq., Fort, Bombay 1, India; 696 pages, $3.20.

This souvenir volume was brought out to celebrate the first 100 years of the Indian textile industry. The volume gives the history of India's textile industry, appraises the future of its cotton mills, and describes the technical developments during the last 100 years. The international section gives accounts of the textile industries in 17 other countries.



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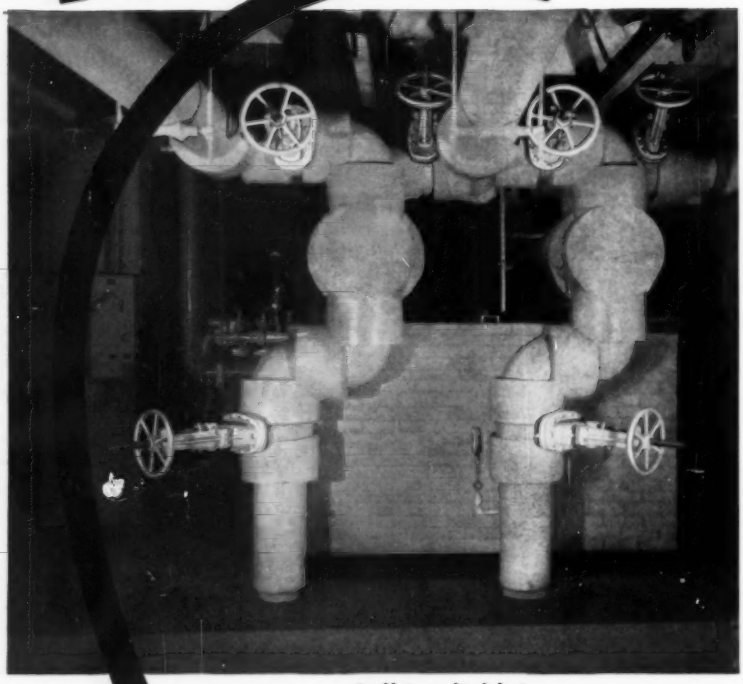

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INTERLOCK KNITTING

CONTINUED FROM PAGE 101

The lower part of the ticket is filed on a board according to the machine the roll was knitted on. These tickets are kept on the board for a week and then filed away. Any complaints that arise can be quickly checked as to who knitted the fabric, who spun the yarn, and the machine it was knitted on.

Where one roll is made during a shift change-over, a figure is entered on the top of the ticket to indicate when the shift changed. This figure is taken from the revolution counter on the knitting machine and eliminates any disputes that may arise.

The yield is determined from the yardage and weight figures. Any broad deviations from standard call for a yarn-size check and a machine adjustment.

How Stitches Are Measured

Stitches are counted weekly on interlock fabrics and daily on jersey fabrics. For fabrics knitted on Supreme 64-feed machines, the yarn is marked at the guide when the take-up is in a certain position. The machine is run for five revolutions and stopped with the take-up in the original position. A second mark is made on the yarn.

The fabric is run down, and the distance between the two marks is measured. The distance may be 18 ins. and the tolerance allowed is $\pm\frac{1}{8}$ in. As 320 courses are measured, the system gives more-accurate results than the customary method of counting courses in 1 in.

As the mill sells all its fabrics, these methods have paid off in satisfied customers to keep Ramseur's machines running 24 hours a day for 6 days a week.

WOOL ORLON YARNS

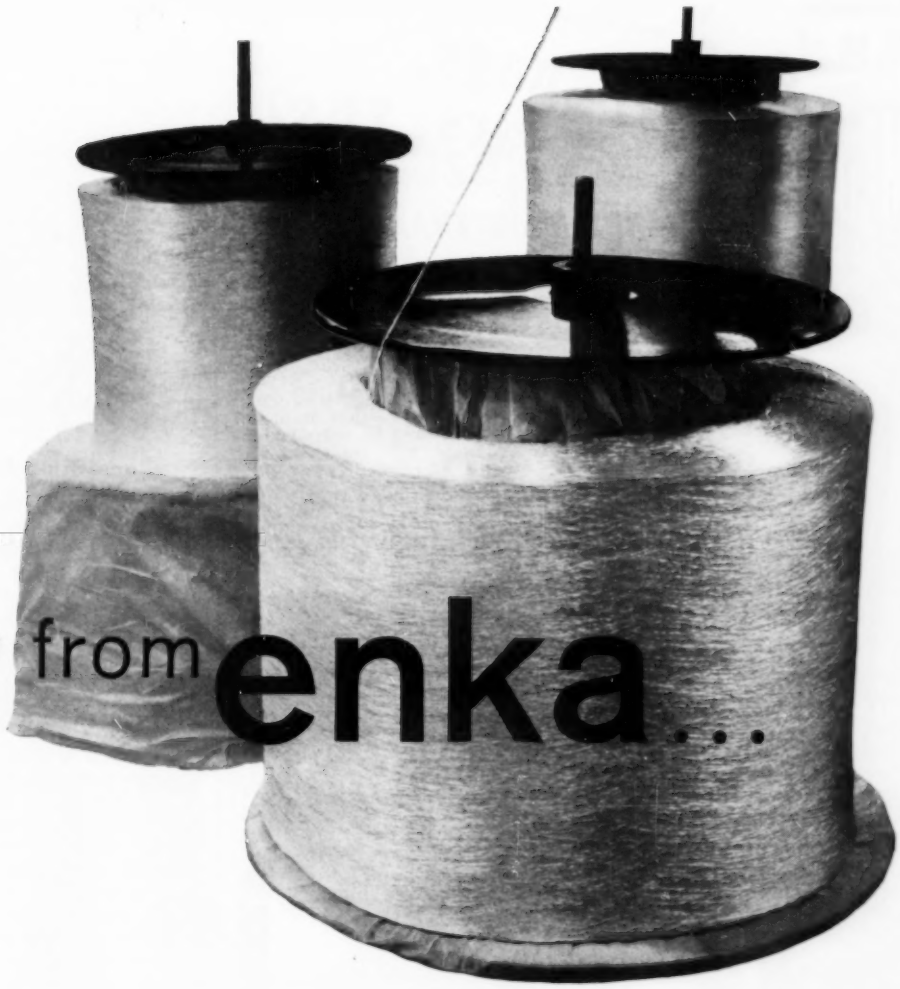
CONTINUED FROM PAGE 93

the stock falls to the floor of the first chamber. This process is repeated until the chamber is filled with sandwiched layers of fiber.

The floor of the first chamber, which is a conveyor, moves the stock into the second chamber of the machine. There, the stock moves forward on another conveyor-floor to the end of the compartment, where pin rollers cut vertically through the stack of sandwiched fiber. The first chamber is refilled while stock in the second chamber is being processed.

Stock Goes to Dyehouse

The wool or Orlon leaves the roller-distributor at this point and is fed through a picker for additional blend-



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These trucks quickly save their cost, permanently increase operating efficiency. Worth investigating. Write immediately for complete details.

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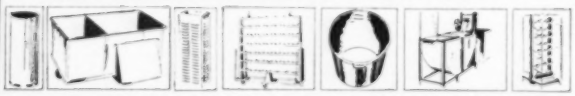
KENNETT EQUIPMENT AND MACHINERY COMPANY
Kennett Square
Pennsylvania, U. S. A.

ing. From the picker, the stock goes to the dyehouse storage bins.

Around 600 lbs. of wool or Orlon are dyed in each kettle. Morton stock-dyeing equipment is used. The mill is experimenting with package-dyeing equipment, which may be installed in the future.

The drying train consists of a feed hopper, rinse bowl, and dryer. The mill has added a condenser both before and after the dryer to give extra opening and fluffing.

After drying, the stock is baled immediately so that it can be handled and stored. Baling is done whether the stock is to be used in 2 hrs. or two weeks.

Wool and Orlon Blended

When ready for further processing, the wool and Orlon are blended together through the P&S roller-distributor. This time, the wool receives a 3½% oil-emulsion treatment as it passes through the bale-breaker unit; the Orlon is treated with an antistatic agent. Alternate batches of wool and Orlon are sandwiched in layers on the floor of the first chamber of the roller-distributor.

The layers of wool and Orlon, still separate, enter the second chamber and are blended by the pin rollers. A pneumatic pipe returns the wool-Orlon blend to the rollers over the first compartment of the machine, and the blending process is repeated.

This second blend is put through the picker and then placed in storage bins over the card room. Each storage bin has a trap door through which the stock is dropped into trucks stationed below. From here, the stock is wheeled to the cards and put into the card hoppers.

Carding Modifications

The card room has an equal number of Davis & Furber and Whitin 72-in. wool cards. The cards normally run at standard 75-rpm. cylinder speed; but on some blends, the machines run 15% or more faster. The faster speeds in some instances have improved roving uniformity as much as 10%. Fancy speeds vary widely and are dependent on the stock being run.

The mill has made a number of machinery modifications in the carding department:

Leather rub aprons on the condensers have been replaced with synthetic aprons because oil in the leather stained the Orlon and would not scour out.

Parallel-ground Peralta rolls with offset bearings were installed on the cards; spring pressure used on the old rolls was replaced with hydraulic pres-

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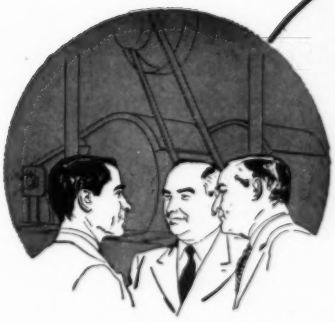

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The Collins C/B Novelty Twister is considered TWO TWISTERS in ONE because each side of the frame can be run independently of the other side in regard to direction of twist, speed and yarn construction. This tape-driven dual-drive arrangement affords unlimited flexibility for the production of novelty and ordinary ply yarns.

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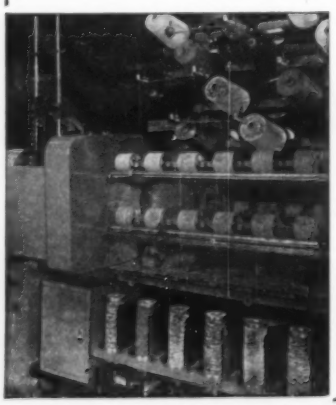

The Collins C/B Novelty Twister was a star performer at Atlantic City and Greenville Shows. Today, mills are daily acclaiming its outstanding cost cutting performance and wide versatility. THERE IS A COLLINS TWISTER FOR EVERY PLY YARN CONSTRUCTION.

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sure. This arrangement permits the use of less pressure to obtain the proper crushing action on the fibers. The hydraulic-pressure units make possible the standardization of pressure for various blends.

Fancy exhaust systems that return the fly to the hopper have been added to keep fly out of the air. On the second breakers, grids were put in to reduce waste.

Side Plates Added

Side plates were added to the top of the cards to reduce fly in the air. Similar plates were put on the bottom of the cards to keep the air-borne fly from entering the 6½-ft. waste pit beneath each card. The plates also protect the operators from injury.

Webb support rolls were installed to keep the web from sagging between the finisher doffer and the condenser.

On the Davis & Furber cards, variable-speed drives were added to permit more critical setting of the doffer.

Wooden jack spools, formerly used, have been replaced with aluminum spools to prevent contamination of the roving. Contamination occurred when the wooden spools became scarred where the roving was cut off; waste would adhere to the barrel and mix with the next lot put on the spool.

Spinning Improvements

The woolen spinning frames have 120 spindles each. Of these frames, half are Davis & Furber and half are Whitin. All frames originally were 6½-in. gauge with 5-in. vertical rings.

The frames are being equipped with smaller rings to permit increased speeds on some yarns. It is planned to increase average front-roll speeds from 105 rpm. to 125 rpm. and spindle speeds from 4,200 rpm. to 5,000 rpm.

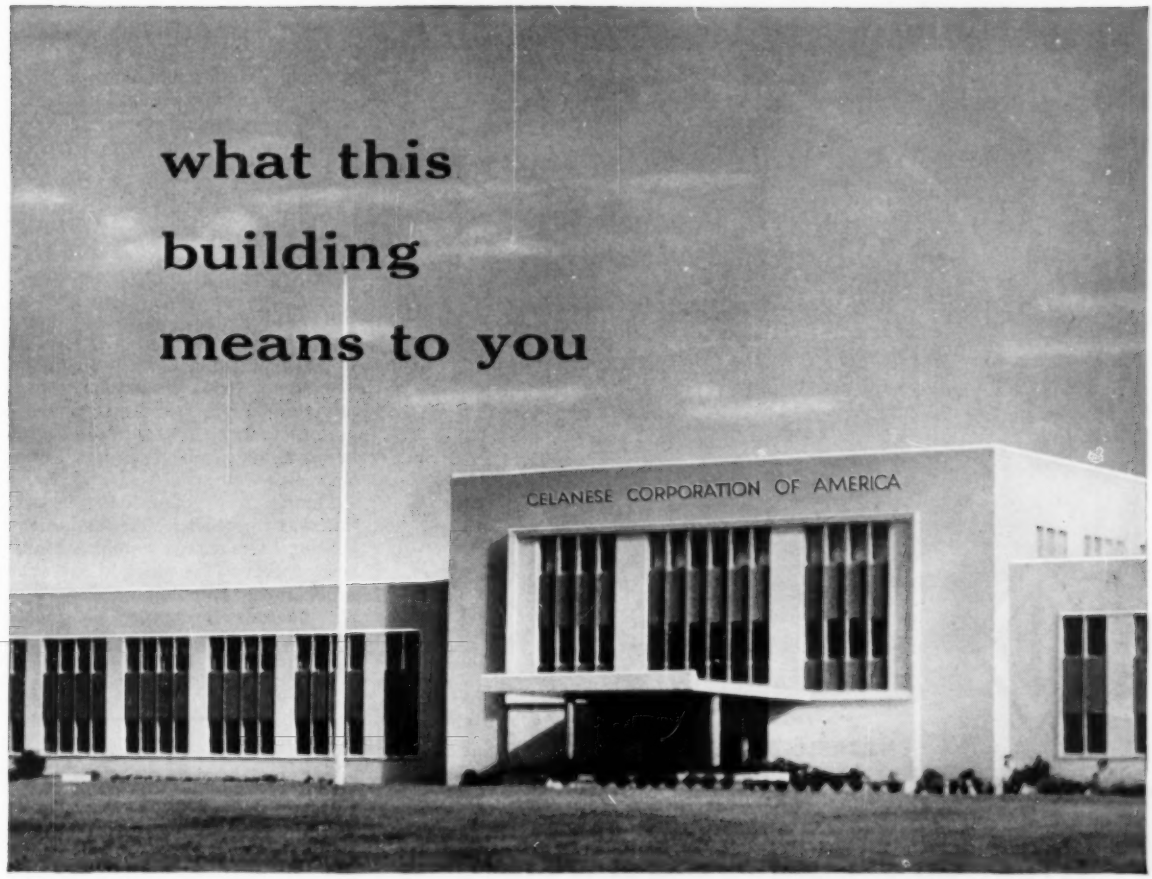
Cotton spinning tapes are being replaced with nylon tapes to reduce slippage. Thomatex vacuum clearers are being installed on all frames. Nylon facings have been put on the top-roll brackets to reduce wear.

Rolls Are Spread

On some of the frames, the top rolls have been spread apart to make cleaning easier and to provide a more-uniform angle for the yarn as it comes from the jack spool to the twister heads. Porcelain guides have been installed at the outside of the ends of the jack spools to keep the roving from rubbing against the flanged heads.

Chain drives on the Whitin frames are being replaced with V-belt motor drives. The new drives are expected to reduce power consumption 10%.

Transferring yarn onto filling bob-



This building is the headquarters of the Textile Division of Celanese Corporation of America in Charlotte, North Carolina. Here are consolidated in one place the sales, spinning, weaving, dyeing and finishing specialists from Celanese operations all over the country.

Facilities have recently been expanded to include an Applications and Product Development Laboratory.

We are proud to say it is the most complete laboratory ever attached directly to a textile industry marketing operation. It will conduct experimental work to help every type of mill operation. Some examples:

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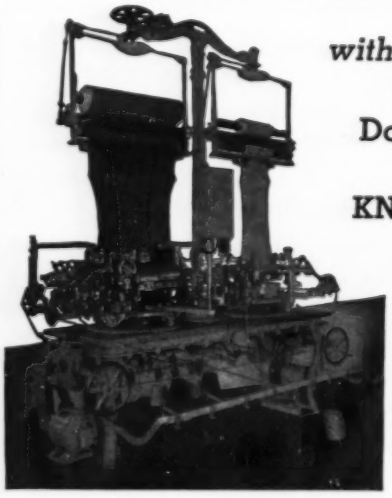

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bins is done on an 84-spindle Whitin-Schweiter winder that has a magazine-type creel. An automatic bobbin loader feeds the empty bobbins to the winding position without manual assistance. A return helix carries unused bobbins back to the hopper for redelivery to the winders.

The yarn is woven on Crompton & Knowles W3 82-in. 4X1 automatic looms.

Plant Is Windowless

The plant is a single-story 300x360-ft. windowless building, laid out so that production flows in a U-shape. The use of truss suspensions and a minimum number of supporting columns permits most of the manufacturing operations to be carried on in one large area.

During construction, careful attention was paid to air conditioning and lighting. The relative humidity can be kept within 2% variation between wide limits. Closely spaced rows of 8-ft. fluorescent tubes on the ceiling produce an even, almost shadowless light throughout the plant.

CLOTH ROOM

CONTINUED FROM PAGE 113

The cuts of cloth are placed on one of two flat grading tables next to the folder by the folder operator. Defects tagged by the inspecting-machine operators are cut out here, and the cloth is graded for shipment. Grader production is 20,000 yds. per 8-hr. shift. Graders are both women and men.

Other Methods of Grading

There are a total of eight Curtis & Marble folders. Other folders are used to fold and inspect cloth in one operation. The folder operator flags defects by dropping in strips of leather at each defect.

This cloth is graded by the same methods used to grade the cloth inspected on the inspecting machines. Two men remove the cloth from the grading table and stack it on trucks.

A third method of inspecting and grading cloth is used at five Curtis & Marble inspecting and rolling machines. Lightweight fabrics such as cheesecloth and interlinings are inspected and rolled in one operation.

Men operate these machines. Rolls of cloth from the loom average 600 to 800 yds. each. Merrow railway sewing machines are used to sew the loom rolls into 1,000- to 3,000-yd. rolls by customer order.

A Butterworth rolling machine equipped with an air guide is used to

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Curtiss-Wright Textile Spindles are designed around what is known as a full-floating footstep bearing, which corrects for irregularities in strand winding, providing a yarn of uniform strength and thickness. By contrast to ordinary, plain-bearing spindles, these units guard quality through every split second of production, while performing at higher speeds. Yarns of every denier are improved by this important development in spindles.

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roll up folded cloth into 1,500- to 2,500-yd. rolls for special customers. A portable American Safety Table Co. sewing machine is used to sew the cloth together.

There are a total of 43 employees in the cloth room. The supervisors consist of a general overseer and a second hand. One maintenance man keeps all machines lubricated and in good mechanical condition.

The cloth room is equipped with an air-conditioning system with auxiliary atomizers. Three Saco-Lowell air filters, each with a capacity of four bags, filter the air before it is recirculated. Relative humidity is maintained at 60%; 75° F. temperature is held when possible.

CARPET-WEAVING MILL

CONTINUED FROM PAGE 105

sure and then are treated by vacuum.

Since the cops of yarn aren't wound on bobbins, they are flexible when they are received at the mill. After the sizing treatment, they are rigid enough to be placed in the loom shuttles easily and hold their positions while the yarn is run off in weaving.

The cops are left in the metal cans when they are removed from the sizing machine. Then the cans are put in large wooden trucks and are taken to central locations throughout the weave room. The trucks are covered with damp burlap. Weavers pick up the cans as they need filling and place them on racks on the looms.

Warp yarns are received at the mill in skeins. The wool yarns still retain oil and are soaked and treated to remove oil and other foreign matter. Then they are processed to put in a permanent crinkle.

The processed skeins are wound from the skeins to cheeses. Then the cheeses are beamed.

Two methods of beaming are used. The old method is to run the cheeses directly onto section beams on a creel beamer. There's one beamer of this type.

The newest method, and the one liked best at the mill, is sectional beaming. Creels of 144 live ends and 144 transfer ends are run on the drum of a 108-in. sectional beamer. Then section beams are run from multiples of the 144 ends.

Slasher Is 144 Ins. Wide

A new Cocker slasher 144 ins. wide originally designed to slash filament-synthetics yarns has been adapted to slash 1,650-den. rayon and jute, kraft cord, and cotton yarns. The machine slashes several warps at once. For

the new name to watch in **KRAFT** *packaging—*

...better products through cellulose chemistry

by OLIN MATHIESON

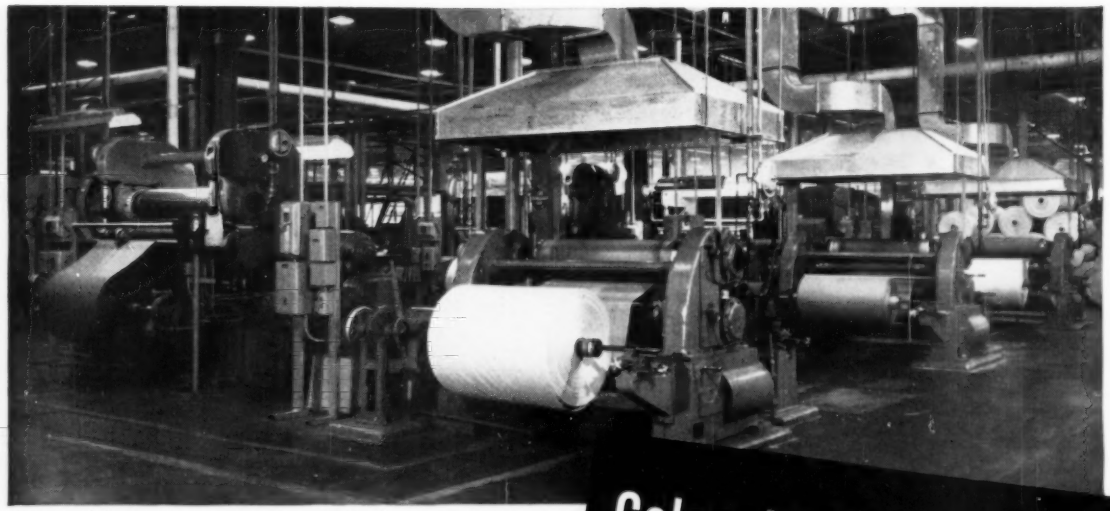
The name FROSTKRAFT is the newest "package" in high-strength kraft products — shipping containers, multi-wall sacks, grocery and specialty bags.

The Forest Products Division of Olin Mathieson Chemical Corporation has created a new combination of resources, facilities and know-how . . . united behind the product name — FROSTKRAFT! To the great Frost timber and lumber industries have been added the recently acquired kraft paper operations of the former Brown Paper Mill Company, Brown Container Corporation, Brown Paper Industries, Inc., Krafco Container Corporation and Negley Bag and Paper Company.

Olin Mathieson brings to FROSTKRAFT many years of intensive research and leadership in cellulose chemistry . . . scientific packaging . . . basic industrial chemicals. This unique combination of resources and industrial skills is now being applied to the continued development of FROSTKRAFT paper products.

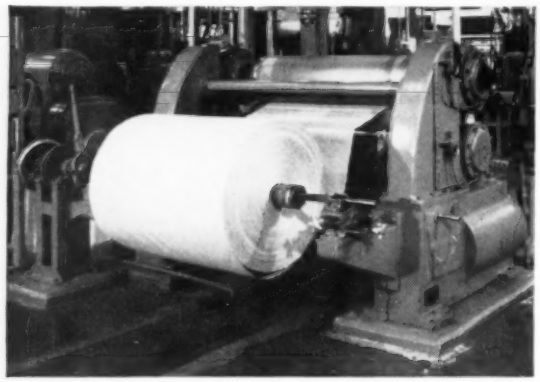
FOREST PRODUCTS DIVISION OLIN MATHIESON CHEMICAL CORPORATION

WEST MONROE LOUISIANA

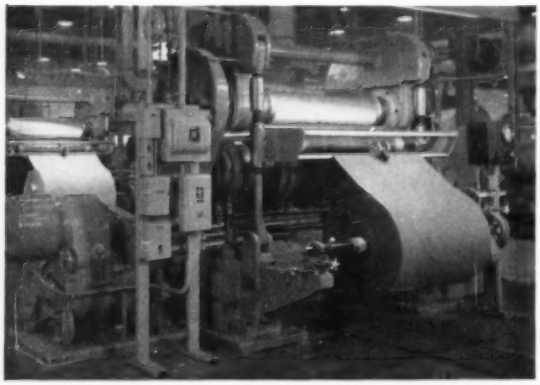


View of finishing operation at The Springs Cotton Mills, Grace Bleachery Division showing Appleton Machine Company 20 Ton Embossers and 50 Ton Schreiner Calenders.

Colonel Elliott Springs Chooses Appleton



One of three Appleton 20 Ton Embossers in use at The Springs Cotton Mills, Grace Bleachery Division.



One of three Appleton 50 Ton Schreiner Calenders specially adapted for everglaze finishes at Springs Cotton Mills, Grace Bleachery Division.

The uncommon elegance of Springmaid sheets can be attributed to Colonel Elliott Springs' shrewd judgment of textile machinery.

According to a trade journal article, the famous Springs Cotton Mills owner demands equipment that meets these requirements:

1—It must be modern.
2—It must be well made.
3—It must be the best available.

There never was a better time to invest in efficient equipment. If you would like to own the finest embossers or calenders in the industry, write or call an Appleton representative today. He will gladly analyze your needs, *without obligation.*

APPLETON MACHINE COMPANY
APPLETON WISCONSIN

CUSTOM-BUILDERS OF TEXTILE CALENDERS • CALENDER ROLLS OF ALL KINDS

example, four warps 27 ins. wide can be slashed at once. Other combinations are two 72-in. warps or one 90-in. warp. One 108- or one 144-in. warp can be slashed.

The number of section beams that can be used at the slasher creel is from 4 to 20. A starch formula is used on jute yarns; a casein formula is used on rayon yarns. The slasher operates at speeds up to 60 yds. per min., depending on the drying capacity of the yarn being slashed. A filament-rayon warp, for example, runs at 45 yds. per min.

Another slasher used at the mill is an older Butterworth model 108 ins. wide. This slasher is used to slash only jute and kraft cord. It operates at 12 to 18 yds. per min.

Warps are moved with a specially designed American MonoRail system with a span of 62½ ft. Two spans cover the entire area. Filament-rayon warps are tied at the loom with a Titan portable tying-in machine. Warps of other fibers are tied by hand. But experiments are being made at the mill in tying other fibers with machines.

The mill is completely air conditioned except the slasher room. The system was made by Worthington Corp. The weave-room atmosphere is kept at 80° F. and 65% r.h.

Continuous-strip fluorescent lighting is used. Tubes are being replaced only at burn-outs at present, but studies are being made on group replacement. The present tubes are estimated at 55,000 light hours.

Training Employees

In referring to training of weavers and loomfixers, General Manager Robert A. McCraney says, "Two supervisors brought down from Yonkers have done a fine job, which is shown by our high production.

"Two learner-weavers were put with one supervisor at the same time. At the end of two weeks, each learner was given one loom.

"The loomfixers were also trained by the supervisors. The looms were set on the floor and leveled by an outside contracting firm. Learner-loomfixers and the supervisors pitched in to erect the looms. Then the learners became loomfixers."

MODERNIZATION

CONTINUED FROM PAGE 107

oiled felt that oils the pins for easier removal from the laps. [The idea for this modification came from a TEXTILE WORLD Kink.] All the pickers have pneumatic lap control.

The three pickers running two shifts produce 92,000 lbs. of stock per week. A 12-oz. lap 55 yds. long

SAFETY in NUMBERS

34 STANLEY Magic Door CONTROLS prevent product damage at AVONDALE MILLS by equalizing drafts and pressures

Drafts or pressure conditions created by doors that remain open too long cause product damage, upsetting specified temperature and humidity requirements.
But *not* at the various Avondale Mills where *34 Stanley Magic Door Controls* open doors on approach, keep them open the minimum of time required to let traffic through, then close them automatically. Above, is a Stanley Magic Eye* Control in operation at the Avondale Mills' plant, Sylacauga, Alabama.

Your mill, too, will benefit through the installation of Stanley Magic Door Controls to operate swinging, sliding or folding doors:

- *To control temperature and humidity.*
- *Save time by speeding up traffic flow*
- *Eliminate maintenance costs due to damaged doors*
- *Improve working conditions*

MAGIC EYE (photoelectric) Actuates door when beam is broken.

PULL CORD Door is operated only with pull of overhead hand cord.

PUSH PLATES Wall-mounted push or kick plates. Adaptable to many industrial locations.

Write for free literature and to arrange a visit from the Stanley Representative.

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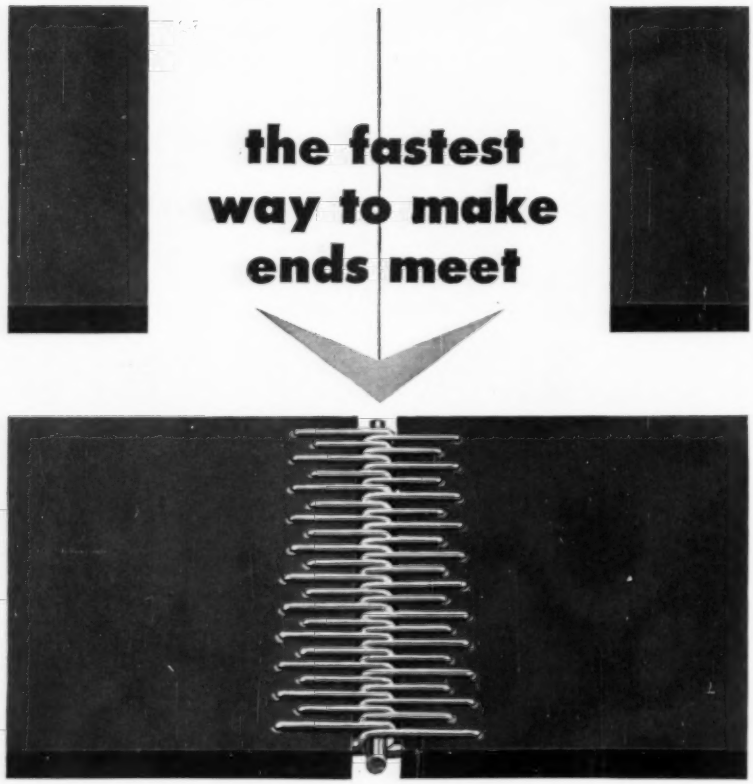

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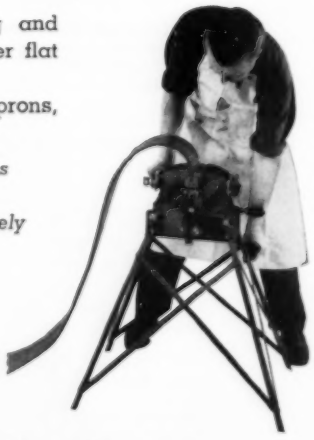
HOOKS and LACERS

in materials handling, food harvesting and processing, power transmission, wherever flat ends must be joined.
Clipper belt lacing equipment for belts, aprons, tapes and ribbons!

- *produces secure, flexible joints in minutes*
- *does not injure belting*
- *gives smooth, flexible joint that rides freely over conveyor rollers*
- *is flexible both ways of the belt*



WRITE FOR FREE SAMPLE

Send a sample of your belting, apron or ribbon to Clipper with an outline of your problem. They'll determine the best method of fastening and then lace your sample FREE.

Ask your Industrial Distributor for Clipper Products

Clipper BELT LACER COMPANY

980 Front Ave., N. W., Grand Rapids 2, Michigan

is made. The mill plans to increase the lap length to 70 yds. when the modernization project is completed. This change will reduce the draft on the cards. One man operates the new picker room, compared with three employed in the two former rooms

Card Creeling Eliminated

A Landahl chainless conveyor transports the picker laps to the rear of the cards where the card tender places each lap directly on the feed roll; creeling is eliminated. The cards were overhauled and reclothed where needed. Metallic clothing is being tested on six cards; the remainder were equipped with Charlotte clothing.

The 12-in. coilers were replaced with 16-in. Gossett ball-bearing change-overs; cans are 16x36. The cans, supplied by National Vulcanized Fibre Co., are designed to hold 28 lbs. of sliver. However, for the convenience of the operators, spring bottoms were installed; these bottoms reduce the capacity to 24 lbs. The cards produce 55-grain sliver at 8 lbs. per hr.

Drawing frames were converted from lap-back to can creel, and the Ideal high-speed drafting system was installed. These frames run 237 ft. per min., compared with 125 ft. per min. before the conversion. The creels, made locally, have wooden rollers. The 48 deliveries of breaker and finisher drawing produce a 60-grain sliver.

The mill bought eight Saco-Lowell J3 slubbers and converted them from 9x4½ to 10x5 at extremely low cost. Also, six 10x5 Whitin frames were changed over to Inter-Draft. Later, the J3 drafting system will be converted to the FS2 system.

Formerly, the mill made 1.60-, 2.20-, and 3.00-hk. roving; now only 2.00-hk. roving is made.

The new spinning room has 16,152 spindles. Frames are Whitin Inter-draft with 3½- and 3¾-in. gauge; rings are 2 and 2¼ ins. in diameter. About 9,000 of these spindles are being changed over to the Roberts High Draft system, which has stainless-steel top rolls, oil-block bearings, revolving top clearers, and a narrow cradle.

Cleaning Reduced 50%

All spinning frames are being equipped with Roberts open creels. These creels, in combination with multiple-nozzle Parks-Cramer frame cleaners, have reduced cleaning 50%. Automatic floor sweepers, already in use in the winding department, are to be installed in the spinning room.

Draft is 30 on the converted frames spinning 30s knitting yarn from 2.00-hk. roving, compared with a draft of

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new **CHLORINE** production?

Despite industry's ever-increasing requirements for chemicals, you don't need a magic lamp to assure adequate supplies in the future.

Coordinated planning of your production with Olin Mathieson assures the availability of chemical raw materials regardless of changing market conditions; assures adequate chemical production to supply growing industrial capacity; speeds the development of new chemical products and processes; provides greater flexibility in shipping and handling of materials; provides the personal attention of recognized product experts backed by widely diversified research facilities.

Today, more than ever, an association with an alert, aggressive chemical producer is essential to your future. Olin Mathieson's long experience and familiarity with the broad market picture will prove invaluable in your planning. Why not consult with us *now?*

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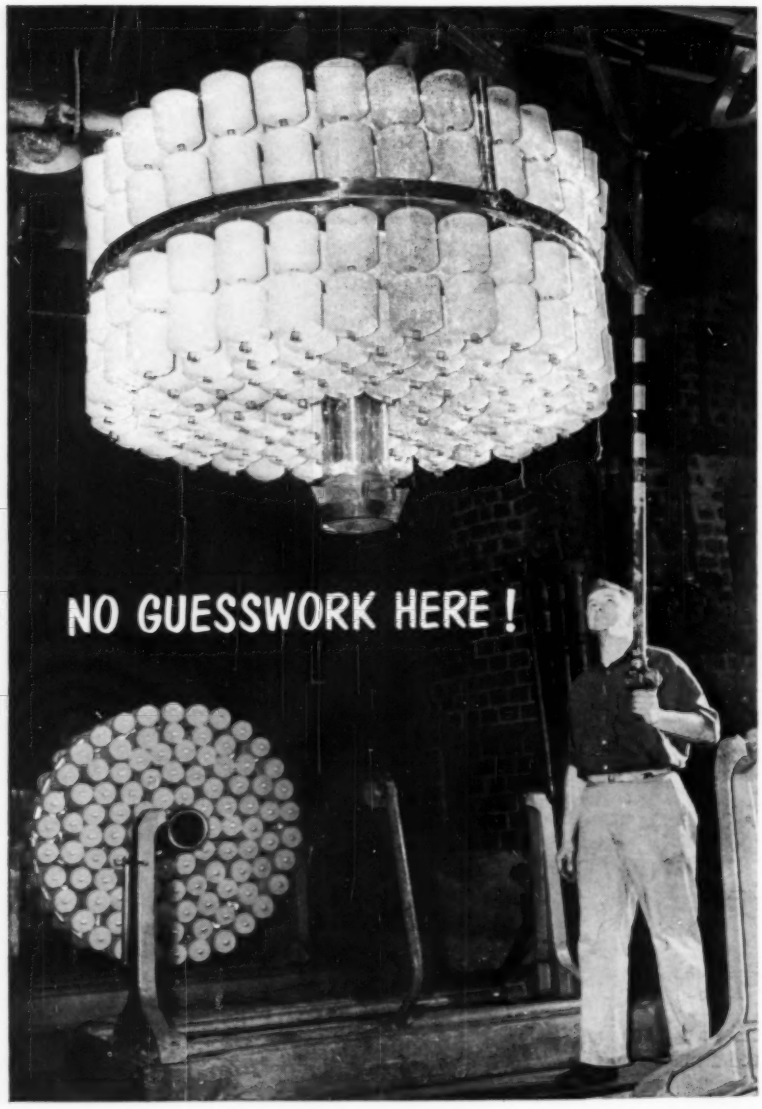
ORGANIC CHEMICALS: Ethylene Oxide • Ethylene Glycols • Polyethylene Glycols • Glycol Ether Solvents • Ethylene Dichloride • Dichloroethylether • Formaldehyde • Methanol • Sodium Methylate • Hexamine • Ethylene Diamine • Polyamines • Ethanolamines • Trichlorophenol • Trichlorobenzene



91 Years of Experience and Skill
AT YOUR *Service*

To meet your every yarn dyeing need, Globe offers the best in technical skill, experience, and the most modern equipment.

Globe does package dyeing on tubes, skein and warp dyeing and bleaching, warp mercerizing, and sizing. Yarns processed include cotton, rayon, worsted, nylon, linen, blend and novelty yarns. Also Acrilan—Dacron—Orlon.

Globe Dye Works Co.

91 Years of Service to The Textile Industry
1865 • 1956

4500 WORTH STREET, PHILADELPHIA 24, PA.

18 before the change-over. To make a soft-twist yarn, which the mill prefers for knitting, twist multiplier has been reduced to 2.80.

The spinning room is air conditioned with Industrialaire equipment.

The floor space that was released from the spinning reorganization is being used to house the consolidated carding department.

Floors in the spinning rooms were replaced as the machines were moved. Heart-pine timbers, embedded in the concrete foundation in 1919, were found to be sound, and the new subfloor was nailed directly to them. Top flooring is hard maple sealed with Harmon floor sealer.

The next step of the modernization program will include 25% enlargement of the package size of the spinning frames and the installation of a vacuum-collecting system. The final step will be modernization of the dyehouse.

DOPE-DYED FABRICS

CONTINUED FROM PAGE 99

Set marks, or lay marks as they are called at Schwarzenbach, are the most serious cloth defect. Steps taken to prevent set marks include:

1. All possible loom repairing is done at warp-outs to prevent loom stops.
2. Weavers' jobload assignments permit them to get to stopped looms quickly.
3. Weavers are able to lessen the degree of set marks by resetting the pick wheel at long loom stops. Sometimes weavers pull up on the pick wheel; at other times, they pull out picks of filling and let back the pick wheel.

Foremen check warp tension by cloth appearance as they inspect the cloth on the looms each day. The tension is increased or lessened by rule of thumb until the cloth face appears uniform.

Cleaning Is a Big Job

Keeping the loom-finished cloth clean is of great importance. To keep the cloth clean, Schwarzenbach has installed a strict loom-cleaning program that also includes the building. The results are an almost spotlessly clean weave room.

Cleanliness in the weave room begins with the floors. The concrete floors are painted gray-white. Warp men on all shifts mop the floors constantly in their spare time. Two men per shift do this work.

Guards cover most of the loom motions where there is danger of splattered oil. Metal guards are

FOAMGLAS®

the cellular, stay-dry insulation

"We licked our condensation problem because FOAMGLAS insulation stays dry in 64% humidity!"

states Donald Purrington, Supt. of Engineering, William Skinner & Sons, Holyoke, Mass.

Freedom from condensation is vital to quality control in the Holyoke, Massachusetts mill of William Skinner and Sons . . . home of world-famous Skinner silks and satins. The constant efficiency of *stay-dry* FOAMGLAS roof and wall insulation helped lick their condensation problem.

Mr. Donald Purrington, superintendent of engineering at the Holyoke mill relates: "The everchanging New England weather and high inside humidities made condensation a serious problem. That problem doesn't exist in our new FOAMGLAS insulated mill, built in 1948.

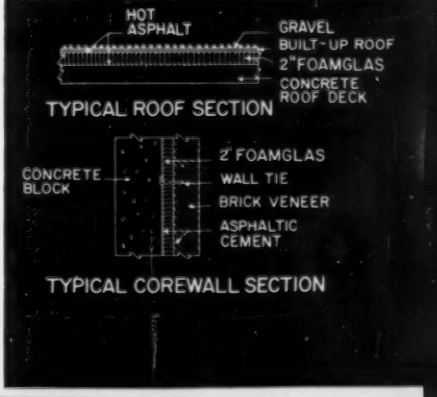
"Seven years' service has proved to us that FOAMGLAS stays dry for constant insulating efficiency—despite the 64% humidity we must hold for best loom operation. We get precise temperature-humidity control needed to prevent condensation, and have had no insulation replacement."

Mr. Purrington concludes: "In a high moisture situation like ours, it would be a definite mistake to use an insulation with less than the fully moisture-proof quality of FOAMGLAS!"

Take a tip from Skinner! Solve *your* insulating problems with FOAMGLAS, the cellular glass insulation that *stays dry* to give you long-lasting insulating efficiency. It's strong, fireproof and rot-proof, too. Send today for a sample and our latest literature describing the use of FOAMGLAS to insulate: (1) roofs, ceilings, walls and floors; (2) cold storage spaces; or (3) piping, tanks and other equipment. Indicate your specific interest.

Pittsburgh Corning Corporation
Dept. AH-16, One Gateway Center
Pittsburgh 22, Pennsylvania
In Canada: 57 Bloor St. W., Toronto, Ontario

Mr. Purrington is shown on the FOAMGLAS insulated roof of Skinner's Holyoke Mill. He reports: "The unusually high strength of FOAMGLAS eliminated all possibility of damage from roof traffic. Its effectiveness has exceeded our expectations."
Engineers: Lockwood Greene Engineers, Inc., Boston, Mass.



already widely accepted and used for speed control on textile machinery . . .

Wood's offers the simplest variable speed sheave on the market today! So easy to change speeds. Simply turn the single adjusting screw from either side to change pitch diameter. With the speed chart furnished you can adjust the sheave to the desired speed without trial and error. Simplified design provides positive clamping of the two adjustable flanges—eliminates fretting corrosion. Single wide range belt gives maximum HP efficiency. Does away with the problem of maintaining matched belts and matched grooves. (Maintenance costs go down because no periodic lubrication is necessary for the drive.)

If you are interested in lowering costs, ask for complete information on the most talked about drive in the Spin-Weave Industry, write for Bulletin #497 and the name of your nearest Wood's Distributor. No obligation.

HIGHER EFFICIENCY
LARGER SPEED RANGE
ACCURATE SPEED SETTING
CLAMP SLEEVE DESIGN
LESS SHAFT OVERHANG
ADJUSTABLE ON EITHER SIDE
POSITIVE LOCKING
POSITIVE ALIGNMENT
SIMPLIFIED DESIGN
EASY INSTALLATION
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around the dobbies, over crankshaft bearings, and other danger spots. Transparent plastic sheets on steel frameworks easily lifted off are under the harness sheaves, over the drop wires, and around the woven cloth. The guards under the harness sheaves are cleaned each shift with a portable vacuum cleaner.

Other Cleaning Methods

Reeds on light-shade fabrics are cleaned at each cut mark by a reed cleaner. Harnesses are cleaned in the loom at every third warp-out, which is every 12,000 to 15,000 yds. Harnesses, reeds, and drop wires are thoroughly cleaned in the drawing-in room at warp cut-outs.

Weavers and loomfixers are trained to keep their hands clean. Wash basins with running water are located at central positions in the weave room.

Fluorescent lighting fixtures are located over each loom only 7 ft. from the floor. They are cleaned with dry rags each time a warp is out.

Looms are washed down with a solvent at warp cut-outs. At tie-backs, they are also washed down, but less thoroughly.

The weave room is equipped with a Buensod-Stacey evaporated-water air-conditioning system. Atomizers are placed at duct outlets. James Marshall was consultant for the air-conditioning system. Temperature of 82 to 83° F. is maintained; the relative humidity is kept at 68 to 70%.

Grade Cloth All the Time

Cloth is graded on all shifts. If 50 yds. or more of cloth is on a loom when a roll of cloth is graded as seconds, the cloth is doffed and inspected in the cloth room immediately. Therefore, many seconds repeats are eliminated.

Cloth is doffed at the looms in 75-yd. rolls on heavy fabrics. On taffetas, rolls of cloth run 110 to 115 yds. in length. At the sewing machine in the cloth room, 15 to 18 rolls of loom cloth are sewed together in one roll.

These large rolls are moved by monorail and hoist to racks back of the grading machines. Up to 18 rolls of cloth, consisting of 15 to 18 loom rolls each, can be placed on the rack at each grading machine. A grader puts a new roll around the machine by a slight push downward.

There are only four grading machines. This number is sufficient since cloth is graded on all shifts. Production per grader is 400 yds. per hr.

Grading is done by the point system. A major defect such as a set

Stop Migration of Pigment Colors with

SUPERCLEAR

An Approved Medium Recommended by Dyestuff Manufacturers

When pad-dyeing synthetics with dispersed pigment colors, use Superclear in the pad liquor to eliminate shading from selvedge to selvedge—and to end tailing off of shades. Use Superclear in vat-acid continuous dyeing to obtain level shades with any mixture of vat dyes. Use Superclear for pad-steam continuous vat dyeing for absolutely uniform pigmentation. In all three processes Superclear allows a full range of level shades from pastels to deep tones—without migration of pigment! Why not gain this same excellent fixation in your own operation—write for a sample and complete information today.

LOMAR PW is recommended as a successful suspending agent. For those who add wetting agents in these operations, we have a full line to offer. Contact Jacques Wolf today for your sample and complete information.

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Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.

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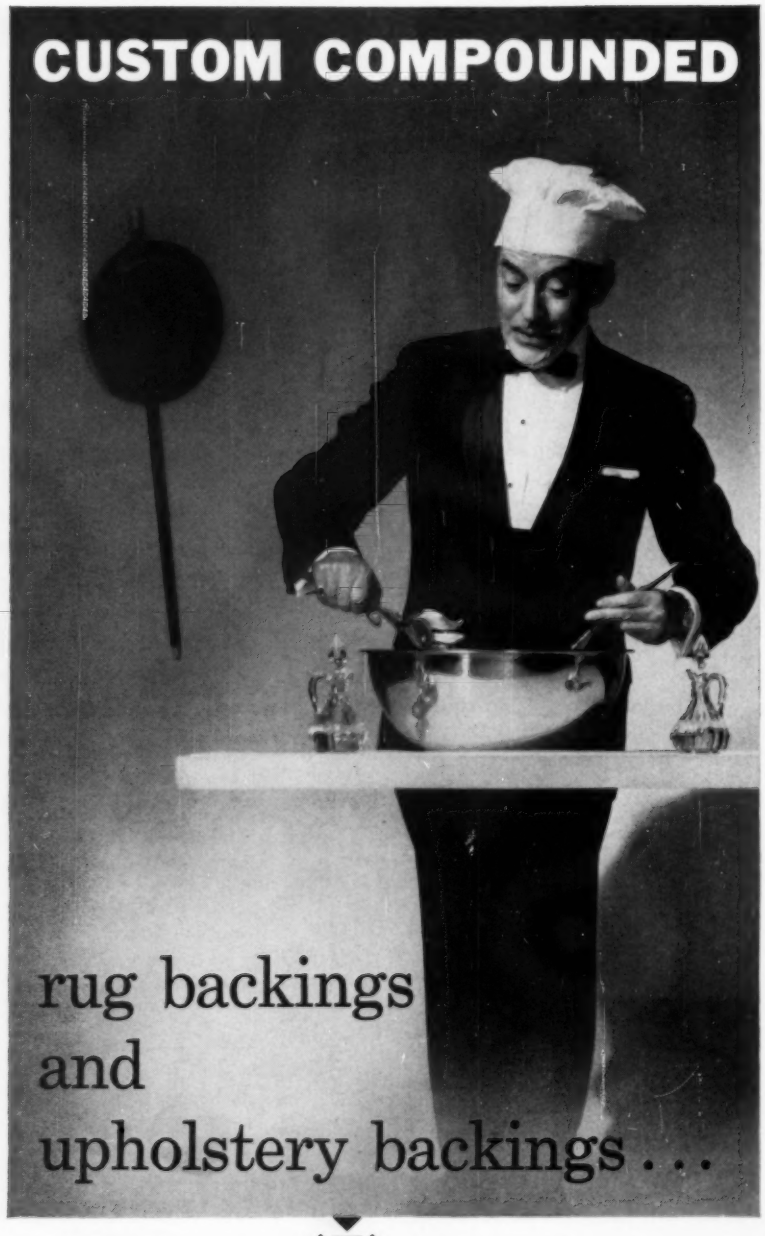

rug backings
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All General Latex natural and synthetic latex compounds are blended to perfection . . . to meet your most discriminating requirements.

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mark counts 10 points. Three major defects, or 30 points, are permitted in Grade-A cloth. Cloth with less than nine major defects is graded as B. Cloth with nine defects is C.

FLOOR SPACE

CONTINUED FROM PAGE 121

Both the yarn dryer and the carpet dryer were designed and built especially for the roof installation. The yarn dryer is an Andrews & Goodrich single-pass temperature-controlled unit that holds 1,500 lbs. of carpet yarn at one time. To get the yarn up into the dryer, a sectional conveyor made of light steel plates was built. The yarn in hank form is placed on the conveyor and held to it on the upward climb by a series of leather belts. After passing through the dryer, the yarn falls into a hopper from which the yarn can be loaded into trucks.

The carpet dryer, a Proctor & Schwartz development, is a single-pass machine designed to deliver air to both the face and back of the carpet. Air flow is balanced so that the carpet is supported mainly by the force of hot air. The carpet is hauled through the dryer by spiked reels at each end. The drive on each reel can be varied to maintain constant tension. The entire back-coating, drying and shearing operation is continuous. Space saved by mounting the dryer on the roof is used in part for the coater and shears.

To set the twist of 8 tpi. in its carpet yarns, Alexander Smith places the scoured and extracted yarn on poles mounted on trucks. The trucks are run into a huge cylinder, two at a time. Each truck carries 900 lbs. of yarn, which is steamed for 50 mins. at 2.5 lbs. pressure. Automatic controls govern pressure and steaming time.

Practically all of the steamer is installed in the mill yard. There is much more room to maneuver the large yarn trucks with most of the steamer out of the way.

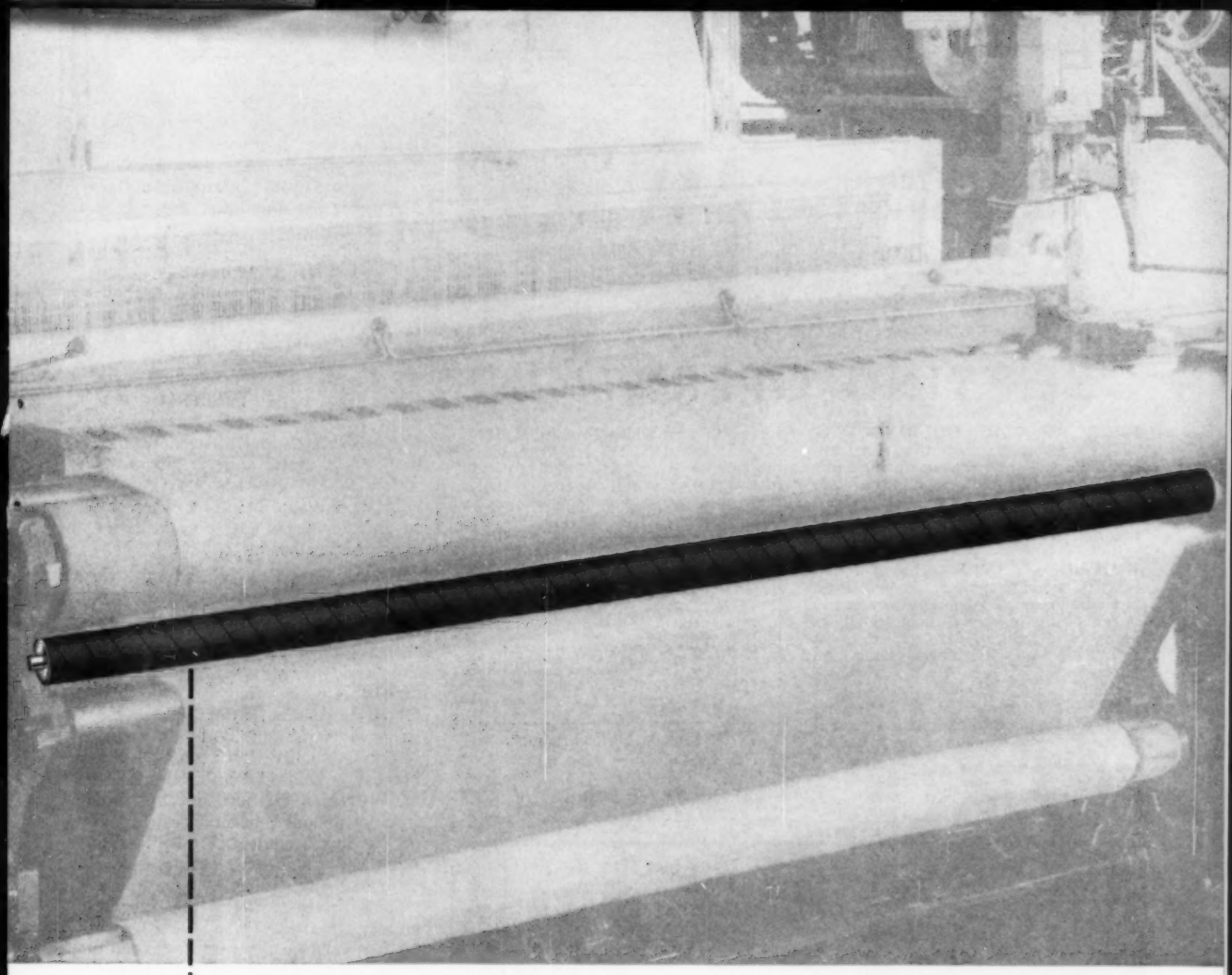
COTTON TRICOT

CONTINUED FROM PAGE 123

Move Guides to The Left

To get best results on the knitting machine, raise the guide bars above their normal position to permit slubs and knots to pass freely through the needles. Set the guide bars from the center to the left of the space between the needles for coarse yarns. This setting keeps the threads central between the needles.

Increase the guide-bar swing, mainly



This resilient press-roll covering reduces fabric creasing

Here's a loom press-roll covering that's specially made to prevent cloth from creasing on the take-up roll. It is Armstrong DK-149.

Because it's made of sponged synthetic rubber reinforced with springy cork particles, this unique covering has the resilience to hold the cloth snugly against the full width of the take-up roll.

The result is that take-up tension is maintained firmly and evenly from selvage to selvage, greatly minimizing the risk of creasing even the most delicate fabrics.

The resilient cork-and-rubber composition of DK-149 means long wear, too. It won't flatten out or develop high spots. In many mills, DK-149 Covering has run for more than a year—and maintained good fabric control all the while.

Armstrong DK-149 comes in handy ribbon form for quick, easy application to the roll. Your Armstrong man will be glad to arrange a test of DK-149 on your looms.

For information on the full line of our loom supplies and other textile products, send for your copy of "Armstrong Textile Roll Coverings and Mill Supplies." Address Armstrong Cork Company, Ind. Div., 6901 Dauphin St., Lancaster, Pa.

Armstrong LOOM SUPPLIES

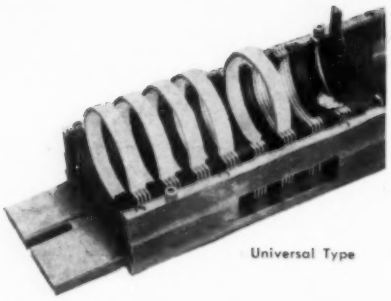
. . . used wherever performance counts

Take-Up Roll Coverings • Clutch Discs and Inserts • Temple Roll Coverings • Brake and Let-Off Strips

✓ NO SPACERS TO LOAD . . .

✓ FAST STRIPPING AND LOADING . . .

✓ NO CHANCE OF OFF-CORE . . . in



Universal Type

SLITTING OPERATIONS

FIESTER'S CORE HOLDING FIXTURES provide a way of saving considerable time and money during your slitting operations. Available in two types (Individual and Universal), these fixtures are now in use by leading manufacturers.

INDIVIDUAL TYPE — Intended primarily for long runs and fixed settings, but changes may be made very easily by changing inserts to desired width. Made in lengths of 6 to 60" of finest extruded and machined aluminum parts.

UNIVERSAL TYPE — Especially adapted to short runs and frequent width changes, this type may be adjusted to any width core in a matter of minutes. Inserts are available in increments of ⅛" and held to close tolerances to avoid off core troubles. Male and female parts are marked for fast accurate assembly.

NEW MANDREL FOR REWIND AND SLITTING OPERATIONS!

Consists of three leaves mounted on a 3" mandrel and coated with Midlite composition for added precaution against loose cores. Made of hard aluminum with all working surfaces 50 R/C for long wear. Manual-or-air operated. Wgt. of 60" mandrel approx. 17#.

Write for complete information.

FIESTER'S 324 Magnolia St. Highland Park, N. J.

toward the rear of the machine, to position the threads lower on the needle beards during the overlap. This setting prevents the threads slipping back to cause drop stitches.

Increase the forward movement of the sinker bar and lower the needle bar to assure a more-positive knock-over action.

More press is necessary to compensate for the lower needle position. Correct timing of the press is important to prevent split threads, which will cause needle breakage.

Automatic let-off mechanisms will supply yarn to the needles at a uniform rate and guarantee a uniform fabric and even pull on the needles with a constantly correct knock-over action.

Sley points are helpful to keep the threads separated and prevent them clinging together.

Run Knitting Machine Slower

The speed of the knitting machine will depend on the fabric construction and the yarn quality, but the speed will be less than for equivalent fabrics in filament yarns. The speed range will vary from 200 to 400 rpm.

Run a quality check every 4 hrs. because runner variation leads to faulty fabrics. Remove lint by hand from a threaded machine when excessive lint accumulates on the sley points and guide bars. Do not use an air hose for this job.

The best conditions for warping and knitting are 75 to 80° F. with 62% r.h. Store the yarn at no more than 62% r.h. to prevent mildew, which develops if the moisture content in the yarn is higher than 11%.

Separate the machines that are knitting or warping cotton from other equipment by curtains or removable walls to keep lint from settling on the machines, yarns, and fabrics.

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TUFTED CARPETS

CONTINUED FROM PAGE 127

Drying Varies

Rogers uses a Proctor & Schwartz single-pass open-width dryer for some types of carpeting, tumblers for others. Tumbler drying is preferred for some constructions because it tends to fluff the pile and give a better cover.

Drying capacity at the plant will be greatly increased when a new multipass dryer is installed in the dyehouse addition now under construction. J. H. Rogers, owner of the plant, looks on open-width dyeing on beams as a valuable new tool.

"We are getting good results in side-to-center matching," he says,

MONSANTO TEXTILE TALK

EVERGLAZE® COTTON DRESSES BY JOSEPH LOVE

BOTH TYPES OF RESLOOM* GIVE COTTONS A LASTING "WASH 'N WEAR" FINISH!

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Unlike ordinary finishes, Resloom resins do not coat the surface. They are deposited inside absorbent fibers where they actually modify fiber characteristics.

A Monsanto representative will be glad to work with you on technical problems relating to "wash 'n wear" finishes. Write Monsanto Chemical Company, Plastics Division, Dept. TW-1, Springfield 2, Massachusetts.

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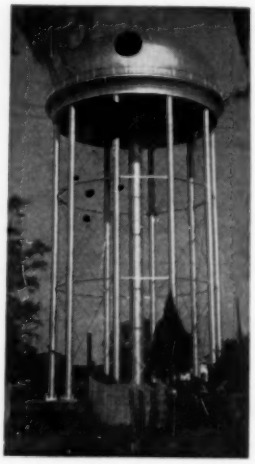
TANKS AND VESSELS FOR THE TEXTILE INDUSTRY



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- STANDPIPES

"and that's been a hard problem to lick up to now."

When the batch has been made up, it is covered with a coarse cotton fabric and the wrapping secured with clamps at the ends of the beam. Then the load is lowered into the dyeing machine by chain hoists, and it is ready for scouring.

Two Baths Used on Some Goods

When it is preferable to scour as a separate operation, the scour bath is made up with a detergent and solvents and the carpeting scoured for 15 mins. after the temperature has been brought up to 180° F. The bath is dropped and the machine refilled with water at 120 to 160° F., depending on the dyes to be used.

Half the dissolved color is added through the expansion tank, and the liquor is circulated for 5 to 10 mins. from inside out. Then the circulation is reversed, and the balance of the color is added. Circulation from outside in goes on for 5 to 10 mins., with the temperature being raised 6° per min. until the bath reaches 180 to 200° F.

A full cycle of inside-out, outside-in is run; and then salt is added in two to four portions at the end of a cycle. When all the salt is added, a full cycle is run and a sample taken. Color adds can be made at this time if necessary. When the shade is completed, a fresh-water rinse is given. A rinse in water containing common salt may be used for some direct colors.

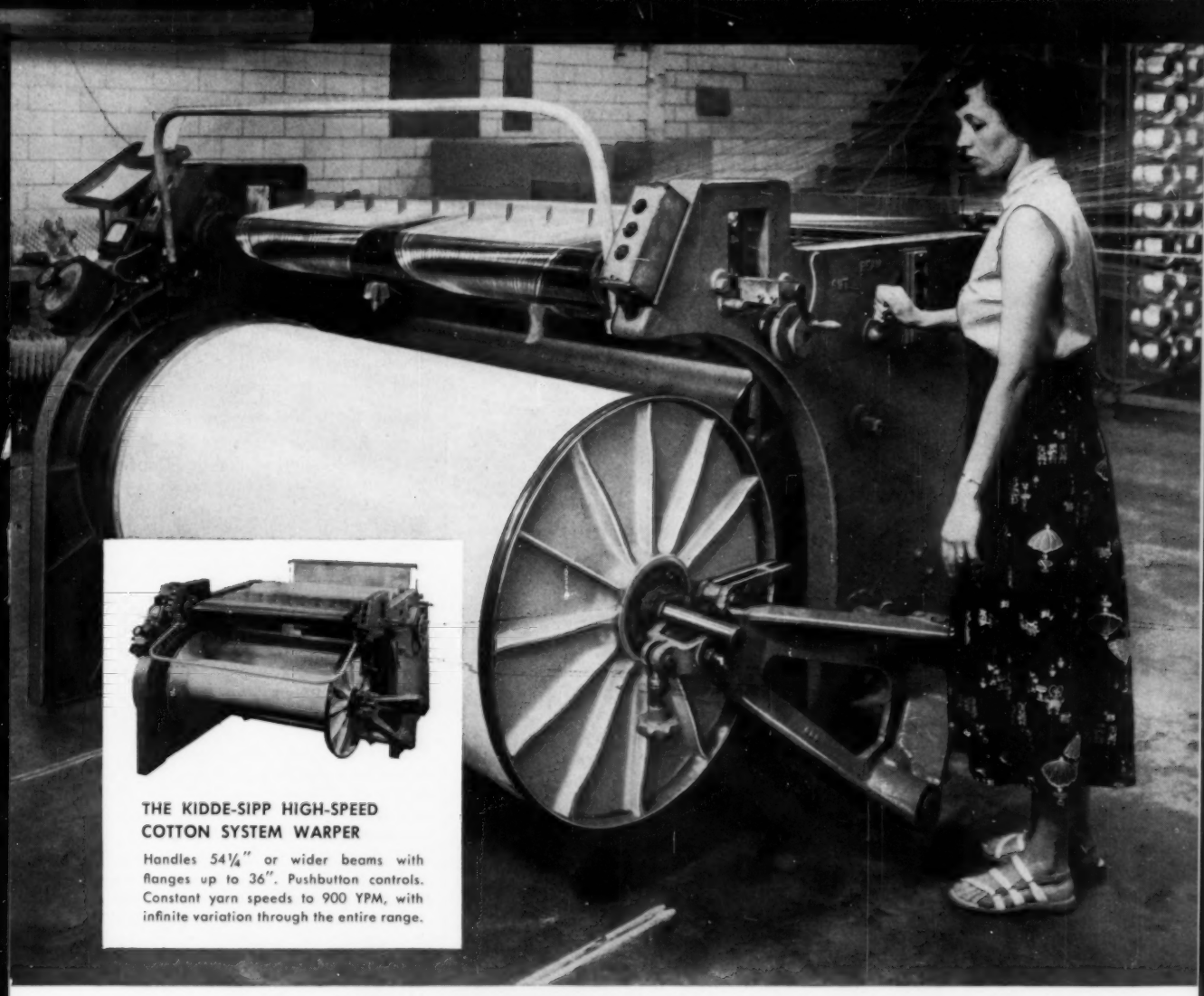
One-Bath Method Is Preferred

Some shades on cotton or viscose rugs are easily done by the one-bath method. Goods are first wet out at 180 to 200° F. for 15 to 30 mins. with a good penetrant. Then color is added gradually during a 10- to 15-min. period. Liquor is pumped through from the inside out; and in some cases, flow is not reversed. After all the color has been added, the lot is run 20 mins. and a patch taken. Salt or color is added as it is required in gradual amounts.

Antistatic finishes or softeners can be added to the expansion tank after dyeing is completed and pumped through the carpeting with satisfactory results.

The dyed carpeting is hoisted out of the dyeing machine and placed in a portable stand equipped with ball-bearing wheels that support the beam ends. All equipment is very heavily made because the wet rolls weigh up to 12,000 lbs. before extracting.

A Birch Bros. open-width extractor equipped with two extra-large Nash vacuum pumps reduces the water content to approximately 75% in one pass over the slot.



THE KIDDE-SIPP HIGH-SPEED COTTON SYSTEM WARPER

Handles 54¼" or wider beams with flanges up to 36". Pushbutton controls. Constant yarn speeds to 900 YPM, with infinite variation through the entire range.

No Powerful Katrina . . . but she doffs beams without help

No brawn is needed to doff the heaviest beam from a KIDDE-Sipp Warper. The operator pushes a lever and an hydraulic system takes over. It gently swings the 2000-pound beam down and out of the warper, leaving it ready to be picked up and taken to your slashers.

Besides easy doffing the KIDDE-Sipp Warper is also well known for the high quality beams it makes. Its dynamically-balanced presser roll is loaded at each end to provide even pressure without bouncing. Beams are smooth . . . free from ridges and flats. Powerful brakes stop the beam within one revolution and automatically adjust themselves to compensate for the increased load as the yarn builds up. The brakes on the beam, the presser roll and the measuring roll are synchronized to prevent yarn scuffing.

The beam is directly driven from the motor by V-belts. Constant yarn speed is maintained by the D.C. drive. Because there are neither counter shafts nor chains and sprockets in the drive . . . smooth and trouble-free operation is insured.

So, if you haven't yet investigated these high-speed warpers, write today to:

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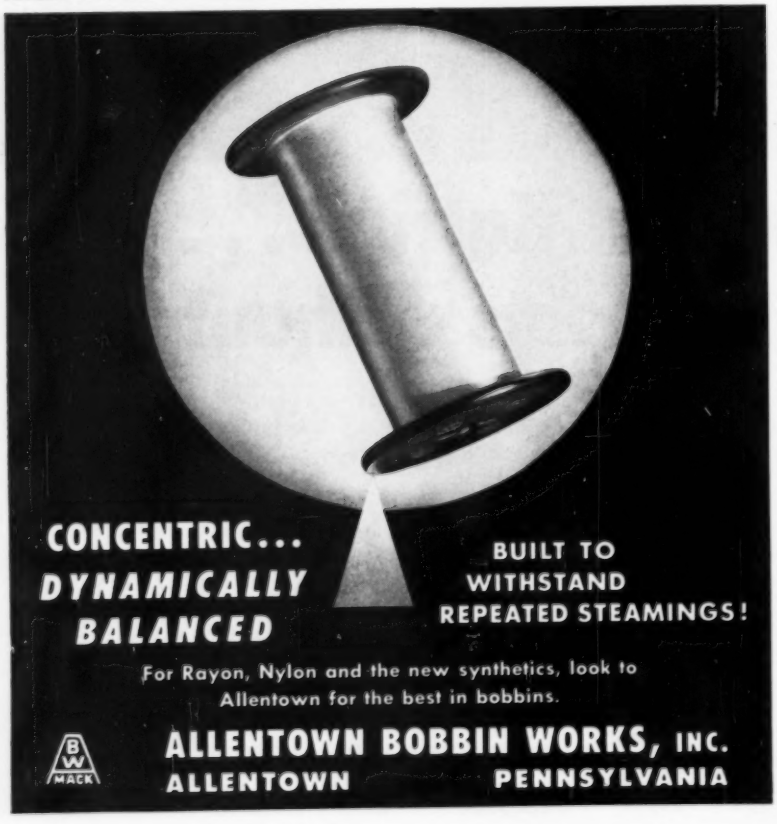

CHIQUOLA CARDING

CONTINUED FROM PAGE 115

In the picker room, the cotton passes through a condenser into one line of five Whitin single-process, three-beater pickers. The back and middle beaters are two-blade, running 1,000 rpm. The Kirschner beater in front runs 980 rpm. The three beaters produce a total of 45 beats per inch. A 51-yd., 14-oz. lap is produced every 6 mins. Humidity in the picker room is 50%.

In the Card Room—

In the card room, 159 45-in. Whitin, Saco-Pettee, and H&B belt-driven cards produce 53-grain sliver at 9½ lbs. per hr. Cylinder speed is 165 rpm.; lickerin speed is 475 rpm.; settings are conventional. The cards are all equipped with Southern States ball-bearing comb boxes. Cans are 12x36.

The drawing setup consists of two-process equipment for the manufacture of sliver for warp yarn and at present one-process frames for filling-yarn sliver. A number of modifications are being made in this department. Frames for both warp- and filling-yarn sliver are being changed from lap creels to can creels, and the filling drawing is now being converted to two processes.

At present, the frames are supplied with laps made on six Saco-Lowell lap machines, 16-ends-up, with 5½-in. rolls. These machines will be eliminated as soon as the can-back conversion is completed.

Warp-yarn sliver is now made on 48 deliveries of Saco-Lowell breaker drawing, 16-ends-up, that produce a 62-grain sliver at 110 ft. per min. Whitin four-roll finisher drawing, six-ends-up, produces a 67-grain sliver at 110 ft. per min. This arrangement gives 96 doublings. The breaker drawing is to be changed to eight-ends-up, since tests show that 48 doublings produce a more-even sliver.

Filling-yarn sliver is made on 44 deliveries of Saco-Lowell one-process, lap-back drawing, 16-ends-up, that produce a 62-grain sliver at 110 ft. per min.

The mill plans to install 44 additional frames and convert to the two-process, can-back system. Doublings will be increased from 16 to 48. Preliminary tests show that sliver unevenness will drop from 18% to 15% when the change-over is completed.

Draft Will Be Decreased

Drafts on the present drawing, both warp and filling, are: fifth to fourth roll, 1.30; fourth to third, 1.43; third

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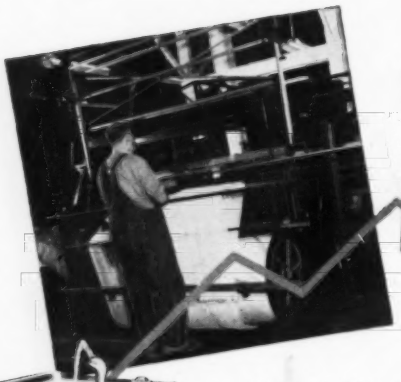
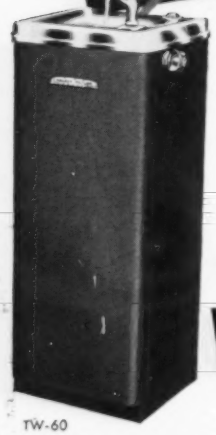


peak performance



Every textile mill is interested in peak performance. An abundant supply of cool water helps, keeping workers refreshed and banishing fatigue. So, to be sure of peak performance in drinking-water equipment, use Halsey Taylor Coolers, as so many prominent mills are doing.
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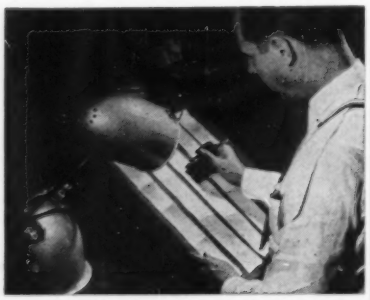

Magical Black Light Ends Color Matching Rejects!

Here at last is a method that takes the guesswork out of color matching —and eliminates rejects. Under Blak-Ray light, even the slightest variations in color tones are visible. Result: yarn and fabric manufacturers—spinners, weavers, knitters, finishers, bleachers, printers and throwsters — are fast adopting the black light system.

Full details are given in new Case History #111X, available free from the **BLACK LIGHT CORPORATION OF AMERICA,** Distributors for Ultra-Violet Products, Inc. **Denver:** 1334 Speer Blvd.; **Houston:** 4616 S. Main St.; **Los Angeles:** 5403 Santa Monica Blvd.; **New York:** 33-00 Northern Blvd. (L. I.); **San Francisco:** 925 Harrison St.; **Seattle:** 104 Prefontaine Pl. Main Plant: San Gabriel, Calif.

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to second, 1.76; second to first, 4.09; total draft, 13.34.

When the changes are completed, drafts will be: fifth to fourth roll, 1.27; fourth to third, 1.36; third to second, 1.60; second to first, 2.47; total draft, 6.82.

In the roving department, 24 Whitin Inter-Draft 9x4½, two-process, 120-spindle, 7-in.-gauge frames make a 22-oz. bobbin at a spindle speed of 1,040 rpm.

The warp-roving frames produce 2.00-hk. roving with a twist multiplier of 1.31; the filling frames produce 2.25-hk. roving with a twist multiplier of 1.28. Both warp and filling frames have a front-roll speed of 147 rpm.

The mill plans to convert the 9x4½ roving frames to 10x5 to produce a 26-oz. bobbin. This change will increase the doffing interval from 2½ to 3 hrs., and cleaning will be reduced.

CONTROL CARDING

CONTINUED FROM PAGE 75

Installation data are not included because of their fixed nature. Cost data are also omitted because changes in pay rates are beyond the control of the department head. Cost figures, when required, can easly be obtained from the production-per-unit figure in the operational data as related to the prevailing pay rates.

The cost data furnished each overseer in this plant include only his actual departmental costs. The prorated plant overhead charges are omitted to give a clearer comparison of the departmental operating costs.

From the standard production per hour and the standard payroll allowance for each process, a standard cost per unit can be established. Actual production and payroll for each process are then compared with the standard costs. Thus the overseer can quickly and easily see exactly where his department stands in relation to standard operations.

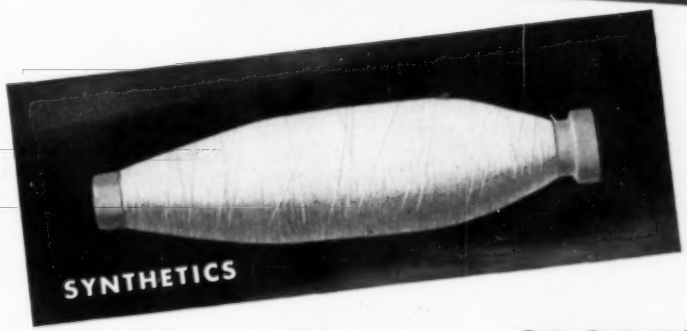
EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 142

Lathe Collets

An improved line of collets, Red Arrow, for its lathes has been announced by South Bend Lathe Works, 425 E. Madison St., South Bend 22, Ind. The collets are heat-treated and form-ground to precision threads.

Circle T-19 on Reader-Service Card



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Globe Gum is manufactured under rigid controls to meet your size requirements exactly.

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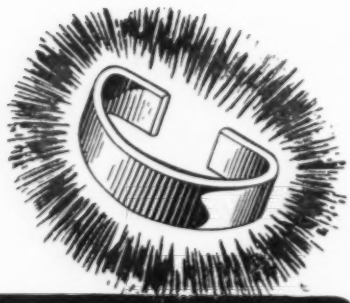

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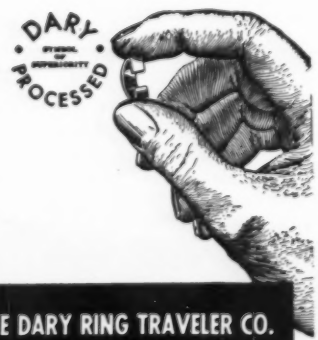

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JAMES H. CARVER, BOX 22, RUTHERFORDTON, N. C.
CRAWFORD JACK RHYMER, BOX 2261, GREENVILLE, S.C.

ROUND TABLE

CONTINUED FROM PAGE 10

of constructive criticism with reference to the yarn-selection tables that appear on page 57.

1. There is no such thing as minimum yarn number. Any yarn capable of withstanding the strains of warping can be successfully knitted on a tricot machine of any gauge. I worked 35-den. acetate, which has an extremely low strength, at 425 courses per minute without any trouble.

There is no such thing as normal yarn number for a specific gauge. Any number that can be accommodated by the machine is normal.

2. Maximum yarn number for a given gauge does not depend on the number of bars in use but on the aggregate denier of yarn being wrapped around the needles. Thus, for example, maximum aggregate rayon denier for a 28-gauge machine is 400, meaning that no more than a total of 400 den. supplied from one, two, or three bars should be wrapped around the needles. We are at liberty to build up this denier in any way desired, such as front bar, 100 den.; middle bar, 150 den.; and back bar, 150 den., or any other combination.

The threading also has a major influence on the maximum denier. For example, on simple nets threaded 1 in, 1 out on both bars, we can utilize twice as heavy denier on each bar since only one thread is wrapped around each needle as opposed to two threads in the case of solid fabrics.

3. In specifying a maximum yarn number, one should draw a clear distinction between actual knitting and laying in. When the latter is resorted to, the yarn never gets under the beards or needle hooks and its number may therefore be much greater. Thus, whereas 400 den. is the maximum for knitting rayon, 600 to 800 den. would be safe for use on laying bar.

4. In speaking of maximum yarn numbers, one must also consider such factors as amount of twist and lubricant, number of filaments in yarn, type of fabric construction, speed of the machine, and size and motion of the knitting elements.

Here is a table of maximum yarn numbers as applied to 28-gauge tricot and raschel machines with 12 needles per inch, with which I am most experienced. The yarn numbers for other gauges may be evaluated from this table.

Maximum aggregate yarn number for 28-gauge tricot

Nylon—350 den.
Rayon—400 den.
Acetate—450 den.
Cotton—18/1
Wool—28/1

For laying-in purposes, the above numbers may safely be doubled.

Maximum aggregate yarn number for 24-gauge (12 needles-per-inch) raschel

Nylon—1,250 den.
Rayon—1,350 den.
Acetate—1,450 den.
Cotton—3/1
Wool—4/1

For laying-in purposes, the above numbers may safely be doubled or in some circumstances even more than tripled.

For weft inlay purposes, almost any size of yarn or even soft-twisted roving may be utilized.

A. REISFELD
Gehring Textiles, Inc.
New York, N. Y.

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 198

Belt Guide Roller

A belt guide roller that substitutes ball-bearing and roller-bearing guides for the conventional fork shift has been marketed by SKF Industries, Inc., Philadelphia, Pa. Increased belt life results when the guide rollers are used. The device is adaptable to most textile drives now employing fork shifts.

Circle T-20 on Reader-Service Card

Bucket Steam Trap

An inverted-bucket steam trap where a new design is said to eliminate possible loss of prime with the consequent blow-through of steam has been announced by Sarco Co., Inc., Empire State Bldg., New York 1, N. Y.

Circle T-21 on Reader Service-Card

Meter for Fork Trucks

A meter to record the hours of operation of fork trucks is now standard equipment on all trucks built by Towmotor Corp., 1226 E. 152nd St., Cleveland 10, Ohio. The meter records a total of 10,000 hrs. of engine operation. Guesswork in scheduling lubrication, oil changes, and inspections is eliminated. The meter also provides a reliable basis for recording fuel and oil consumption and computing costs on specific handling jobs.

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By finish grinding a carefully selected crown radius on roller ends, Rollway relieves high stress areas, insures uniform distribution of load over the entire length of the roller. Rollers can take heavier loads without excessive end-fatigue, and are less subject to the effect of slight misalignment or deflection.

The result is load rating at higher values for greater capacity, longer service life . . . or both. If this choice interests you, why not write for the complete story. Rollway Bearing Co., Inc., Syracuse, N. Y.

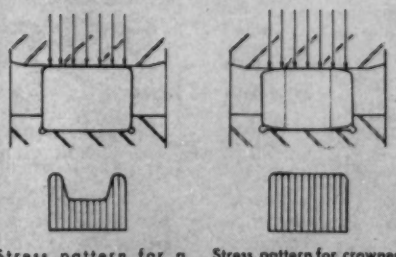
Tru-Rol Bearings with crowned rollers are available in 3 types

Stamped Steel Retainer with Guide Lips

Segmented Steel Retainer

Full Roller

Comparative Stress Patterns under Uniform Loads for Straight and Crowned Cylindrical Rollers



Stress pattern for a straight cylindrical roller under load. Note uneven end-loading.

Stress pattern for crowned roller under load. Crowning radius is exaggerated for clarity.

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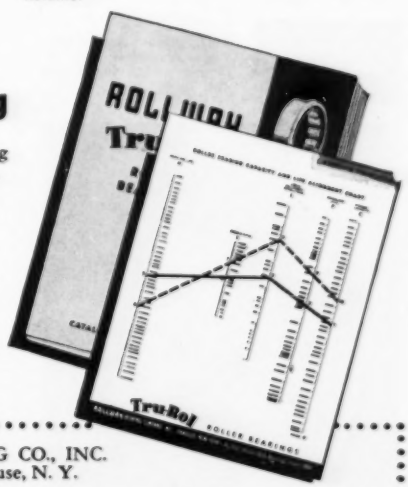

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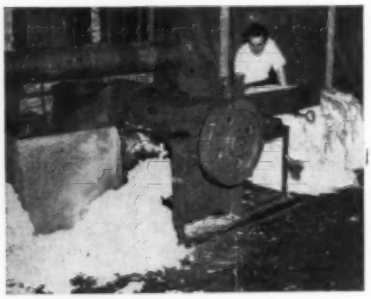
THERE'S A
TAYLOR-STILES CUTTER
for EVERY CUTTING NEED

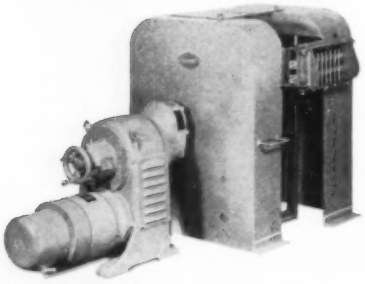
For Thread Waste

Cuts all kinds of tangled and mixed thread waste.



Staple Cutting

This Machine cuts tow and similar forms of filament into uniform particles to make flock at rates of 2400 cuts per minute.



Tow Cutting

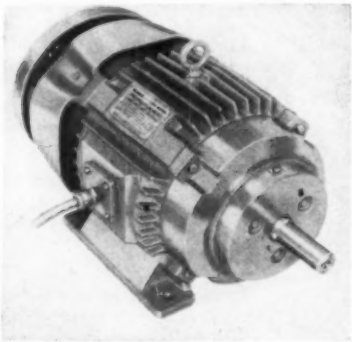
Cuts nylon and other sliver accurately into 2" lengths. Easy to operate and maintain.

Send for descriptive folder of these machines.

TAYLOR-STILES
& Company

15 Bridge Street, Riegelsville, New Jersey

 CONTINUED FROM PAGE 200



Space-Saving Motor

Electric motors for applications such as opening machines, pickers, cards, and spinning frames are made in the new NEMA design by Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio. The motors are available in horsepower sizes from 1 through 20.

Features include a special finish, smooth contour surfaces to shed lint, and new fan cover and bracket. The motors save valuable space because they are small. For instance, the spinning-frame motor may be mounted under the frame instead of in the aisle. The design also reduces the chance of fire hazard and water damage.

Circle T-23 on Reader-Service Card

Electric Insulation Mat

A mica mat for insulating electrical devices has been developed by General Electric Co., Pittsfield, Mass. Less material is required for efficient insulation, and units using the mat can be more compact. The material is available from over 300 authorized GE and independent distributors.

Circle T-24 on Reader-Service Card

Magnetic Element

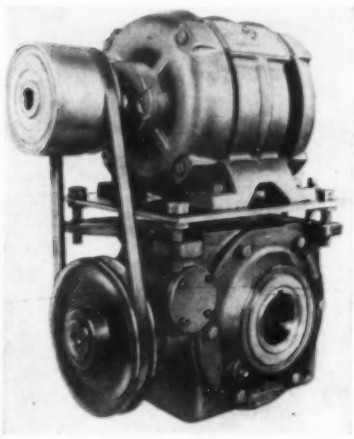
A more-powerful magnetic element has been added as standard equipment to all drum separators made by Eriez Mfg. Co., Erie, Pa. The elements make separators more efficient, and some drums are increased 220% in magnetic strength. There is no appreciable change in cost.

Circle T-25 on Reader-Service Card

Lightweight Portable Pump

A portable pump designed to remove water from flooded floors and flat roofs and for other emergency uses is built by Hypro Engineering, Inc., 700 39th Ave., N. E., Minneapolis 21, Minn. The pump weighs only 26 lbs. but will remove 5 gals. of water a minute with pressures up to 30 lbs.

Circle T-26 on Reader-Service Card



Individual Card Drive

An individual card drive consisting of a 1½-hp. squirrel-cage induction motor equipped with a Mercury automatic clutch has been announced by Allis-Chalmers Mfg. Co., Norwood Ohio Works, Cincinnati, Ohio. The clutch allows the motor to reach full operating speed before the high-inertia card cylinder is accelerated. At normal loads, the clutch is said to have no slippage. A standard-torque motor that requires less power than a high-torque motor is used.

Circle T-27 on Reader-Service Card

Battery Charger

Batteries can be charged right on electric trucks with a battery charger made by La Marche Mfg. Co., 6525 Olmstead Ave., Chicago 31, Ill. The device charges a battery overnight by connecting it to an a.c. power line. Prices start at $60.

Circle T-28 on Reader-Service Card

Printer for Conveyor

A combination conveyor and multiple printer made by Algene Marking Equipment Co., 232 Palisade Ave., Garfield, N. J., will print cartons on your packaging line. The printer is equipped with from one to four heads to mark up to four sides of a carton in several colors.

Circle T-29 on Reader-Service Card

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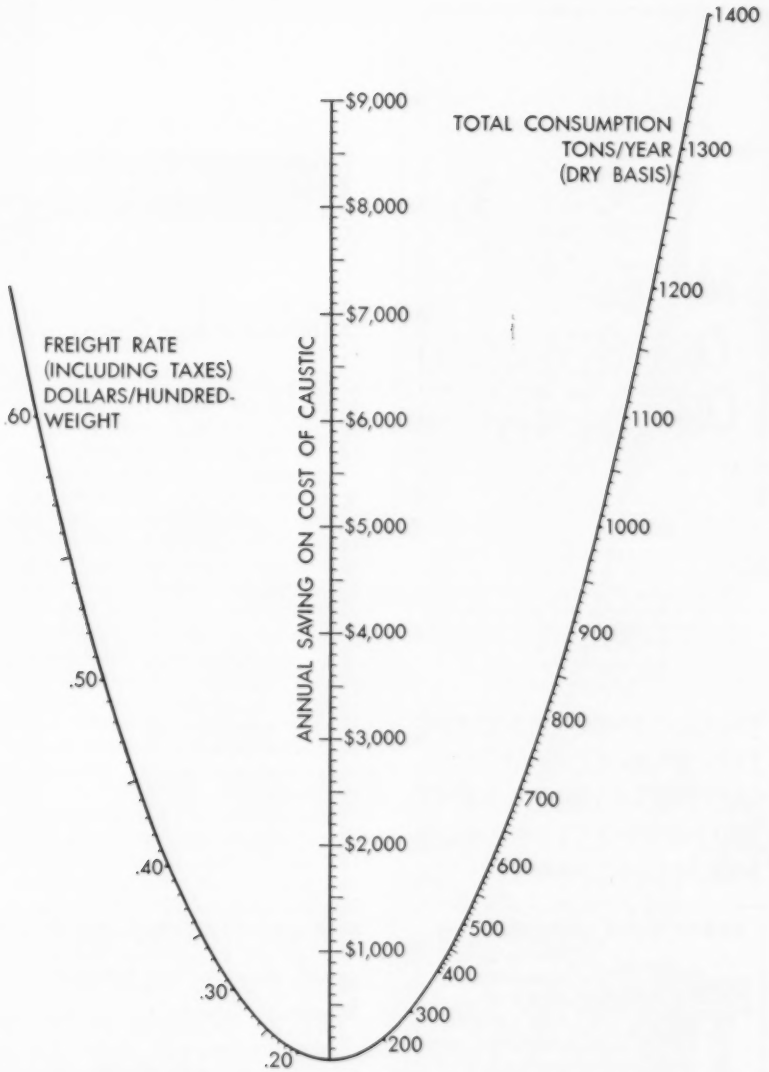

Which saves you more...

50% or 73% Caustic Soda?

This nomograph can help you decide Are you using the caustic solution that's least expensive for you? A few seconds' calculation with this nomograph will help you decide.

How to find if you can save on 73% caustic soda Simply draw a line from your freight rate (including taxes) to your annual consumption in tons on a dry basis. Your approximate savings will appear where this line intersects the center line of the nomograph.

This figure represents your savings on freight charges after the $2.00 premium price on 73% caustic soda has been deducted.

From this figure you must deduct a depreciation charge based on the cost of dilution equipment. Your Hooker technical service man is ready to advise you on the equipment needed and its cost.

Double-check your findings this way Before you make a final decision on 50% or 73%, give yourself the advantage of expert technical advice. Let your Hooker technical service man show you what equipment you will need for 73%. He will figure your exact savings—based on a realistic study of your operations.

For quick service, write or phone the nearest Hooker office.

"CAUSTIC SODA BUYER'S GUIDE" is the title of a new pocket-size booklet we'll be glad to send you free. Contains helpful facts on the economics of 50% and 73% solutions; other forms of caustic soda; capacities of tank cars and other containers; useful shipping information. Write us for a copy.

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say Leading Textile Manufacturers

LUBRIPLATE Lubricants actually condition bearing surfaces and stop progressive wear. They prevent rust and corrosion and resist steam, hot water and many acids. They meet all conditions of the Textile Industry. Use LUBRIPLATE and make One Bearing Outlive Two.

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE

LUBRIPLATE LUBRICATION MAKES CARS AND TRUCKS RUN BETTER AND LAST LONGER

LUBRIPLATE H.D.S. MOTOR OIL . . . THE OIL THAT NEEDS NO ADDITIVES

For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK" . . . a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.

MILL MAINTENANCE

Maintain Motor Controls To Protect Motors

Every electric motor must be connected to the power line by one of two ways: (1) by a simple switch, or (2) by an integrated control.

The most common form of control is a motor starter. The starter is a device or a group of devices designed to govern in a predetermined manner the electric power delivered to the motor. It regulates the performance of the motor and protects the drive and the operator.

All control devices have moving parts, and the devices may fail from improper or insufficient maintenance. If early symptoms of trouble aren't noted and corrected, excessive maintenance costs or complete replacement may follow.

The overload relay in a starter operates only when the motor is in trouble. However, it has moving parts and is subject to corrosion and sticking from dust and dirt. If the relay is neglected for a period of years, it may not trip on an overload and consequently the motor may burn out.

Sources of Trouble

Most troubles with control equipment can be traced to improper application, faculty installation, or an inadequate electrical system.

Improper application results in (1) the wrong overload relays for high-inertia starting; (2) wrong wiring connections; (3) wrong capacity, such as failure to derate a starter for jogging duty; (4) wrong enclosure, particularly in dusty locations; and (5) wrong starting voltage.

Mounting the control in improper locations can cause a lot of trouble. One starter was located in a dusty location in a mill. The abrasive dust thoroughly clogged the starter, and the contactors burned out frequently.

In another instance, the starter was mounted on a wall next to a furnace. The heat caused the overload relay to trip out. In a third installation, the starter was mounted on a wall that vibrated severely. As a result, the overload relays tripped the starter contacts. In each of these installations, the starter was moved to another location where it worked satisfactorily.

Low voltage is a common source of trouble, especially on smaller systems. Low voltage can show up either in starting or running. When the motor is running, it frequently draws a higher current, which causes frequent tripping of the overload relay. The current may also drop so low that the contactor rides back on the relay springs and freezes the trips.

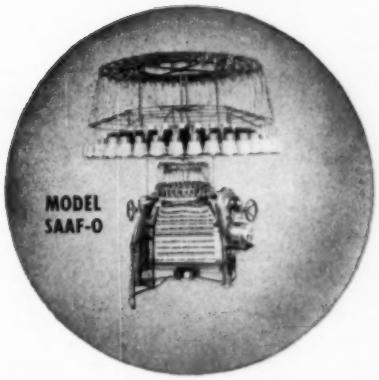
Other trouble occurs when the inrush of the motor in starting draws such a high current that the voltage is proportionately lowered. During the starting period, the contactor is not sealed because of the low voltage on the coil. The result is welding and freezing of the contacts.

Use Skilled Operators

Only skilled employees familiar with electrical equipment and the hazards involved should be permitted to service control equipment. All safety precautions must be observed on the electric equipment and on the driven machines. A periodic inspection schedule should be set up and followed. Precautionary maintenance results in savings in replacement parts and downtime of machines.

Dirt, dust, and grease must be removed periodically from the controller. In addition to causing mechanical failure, dust forms a path between points of different potential and results in a short circuit. Dry dust should be blown off. Sticky dust and grease should be removed with a solvent such as carbon tetrachloride. Be careful when you use solvents to prevent soaking the coils. Give special attention to rust and corrosion.

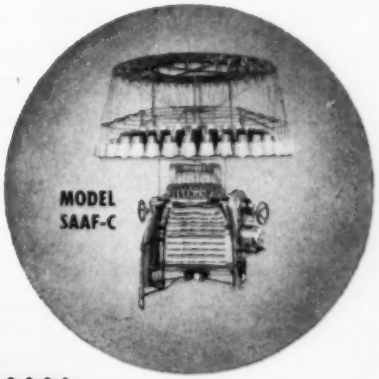
Moving mechanical parts must be free from excess friction. Try the parts by hand to locate any loose pins, bolts, etc. Check parts for excessive wear. The bearings on electrical control equipment are designed to operate without lubrication. If they are oiled or greased, dirt will accumulate. Sluggish action and pos-



These features make SUPREME

the latest word in modernized, low-cost knitting

of automatic, variable striped, patterned or solid jersey *with* or *without* knit-on simulated rib trim and draw thread section separators



HIGH SPEED PRODUCTION

Large number of feeds, rugged construction and stationary yarnstand give you vari-striped and patterned fabrics at unprecedented rates. Standard 26" machine has 32 four color striping boxes — 32 three position pattern wheels—32 automatic pattern placers.

TREMENDOUS VERSATILITY

Striping boxes, pattern wheels and placers on every feed let you pour out an infinite variety of striking, multi-colored fabrics — with pattern inserts twice the size previously possible. Knit a wide variety of fabric construction and textures with virtually any type of natural or synthetic yarn.

HIGH QUALITY AT LOW COST

Knitting efficiency and quality are insured by these ingenious new features—128 cone, "step-design" (Pat. Pend.) yarnstand, new knitting elements system, new striping box with easy, manual setting, new pattern placer with slideable studs for fingertip control and new, scissor-type, synchronized "no-waste" cutters.

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answers all
of your
equipment
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DARNELL
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OVER 4000 TYPES OF CASTERS
& WHEELS FOR EVERY USE!

All types of rubber treads—soft, medium and hard—for smooth operation on all kinds of floors. Featuring Neoprene rubber treads - resistant to oxidation, oils and waxes as well as being unaffected by most chemicals - expertly compounded to Darnell standards.

All casters, whether steel or rubber tread, available in swivel and stationary models with various top plates, stems and fittings for any type application.

Free Darnell Manual

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60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

sible failure follow this condition.

Avoid Overheating

Overheated parts are always a sign of trouble. However, since various parts operate at different temperatures, it may be hard to locate this trouble. For examples, coils, blow-out coils, and other contactor parts may operate at temperatures that will boil water. Therefore, these parts cannot be touched. But any evidence of baking and smoking must be given immediate attention.

Loose connections are always a source of trouble and may develop at any time. Consequently, control connections should be checked periodically. Main-line connections should be checked at the same time.

Use a megger periodically to check cables and conduits for grounds that may develop. Close checking is necessary in locations where water has a chance to collect in the conduit.

Contactors need the most care. Therefore, frequent maintenance of these parts is necessary. Check bearings for free operation, but do not lubricate them.

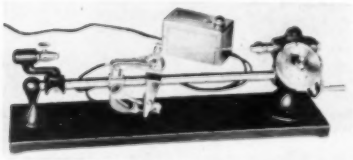
Pitting of contacts does not affect their operation. Deposits, however, should be removed with sandpaper or a fine file. Never use emery paper. In filing, take care to maintain the original shape of the contact. When contacts are deeply pitted, burned, or worn thin, replace them in sets. Avoid overmaintenance of contact tips because the material on the contact surface will be removed. However, copper oxide must be removed since it is an insulator.

Don't file silver contacts unless they are severely roughened. Since silver oxide is a good conductor, it does not have to be removed. Keep the screws that hold the contacts in place tight all the time.

Springs maintain the proper contact pressure. If the contactors wear too thin, spring pressure decreases and overheating results. This condition generally causes the spring to lose its temper, and the contact pressure is reduced further. Check spring tension by the manufacturer's recommendation with a scale. If a scale isn't available, check the old spring by a new one. *Allis-Chalmers.*

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 202



Twist-Counter Attachment

A pendulum attachment that can be applied directly to any standard Scott twist counter is available from Scott Testers, Inc., 95 Blackstone St., Providence, R. I. The attachment is designed to help in analyzing singles twist.

Operation is conventional: tension is applied to the yarn through the pendulum before securing the other end in the head of the twist counter. The swing of the pendulum is limited by adjustable stops. The tension decreases as the twist is removed; when all the twist has been removed, the pendulum is vertical and there is no tension.

As the yarn is twisted in reverse direction, the tension of the pendulum is re-established and a light attached to the upper stop indicates the point equivalent to the original tension.

Circle T-30 on Reader-Service Card

Microprojector

An inexpensive, versatile microprojector named Minipro has been announced by William J. Hacker & Co., 82 Beaver St., New York 5, N. Y. The instrument includes a complete miniature precision microscope with revolving triple nosepiece and objectives providing magnifications from 200 to 800x.

Circle T-31 on Reader-Service Card

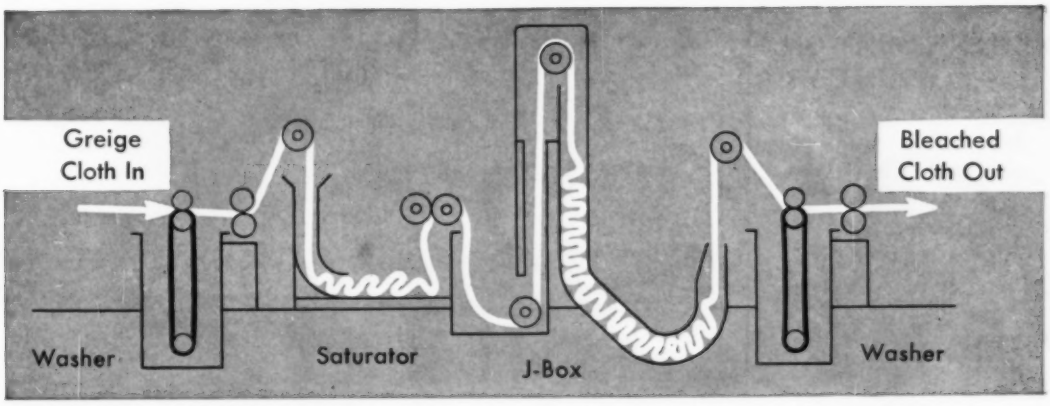
Idler for Conveyor

A conveyor idler made by Joy Mfg. Co., Oliver Bldg., Pittsburgh 22, Pa., shapes itself to the load being carried. Other advantages are: (1) it cushions and guides the belt; (2) there are only two bearings, and they are up out of the dirt zone; (3) it resists corrosion, abrasion, and flame; and (4) it weighs less than steel idlers.

Circle T-32 on Reader-Service Card

Smooth-Head Socket Screws

Button-head socket screws have been added to the line of socket screws manufactured by The Bristol Co., Socket Screw Div., Waterbury 20, Conn. The screws are for appli-



OVERSIMPLIFIED?

Not at all! With Du Pont's new one-step
single-stage peroxide system
just one pass through one J-box
effectively bleaches cotton woven goods

With this latest development of Du Pont practical engineering, boiling out and bleaching are handled simultaneously. This means you can cut over-all bleaching costs by as much as 20%—and still produce results equal in every way to those obtained with the older multi-stage systems.

Du Pont's compact new system enables you to maintain present production levels with half the equipment, half the floor space . . . or double production without additional equipment. Cloth distortion and abrasion from handling are minimized, and savings of up to 50% in labor, steam, water and power are quickly realized.

We'll be glad to show you how your present bleaching system can be modified to operate on this new *one-step* principle. Or, if you're planning to install new equipment, Du Pont bleaching experts will gladly show you how the Du Pont process can substantially cut the cost of your initial investment.

NOTE: *Du Pont does not build or sell bleaching equipment. However, Du Pont systems are available* now *from leading equipment manufacturers.*

Send coupon for details

DU PONT PEROXIDES

ALBONE® hydrogen peroxide, 35% and 50%

PERDOX® sodium borate perhydrate

SOLOZONE® sodium peroxide

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☐ Please send full information about the new Du Pont single-step continuous bleaching system.

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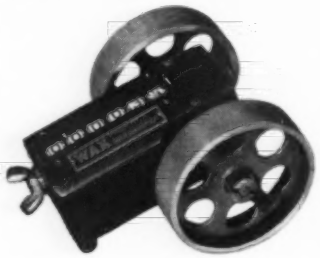
YOU CAN COUNT ON
WAK* COUNTERS



Hank Clocks	Hosiery Counters
Rotary Counters	Pairing Counters
Tenter Counters	Yardage Counters
Inspection Counters	Slasher Counters
Pick Clocks	Sewing Counters
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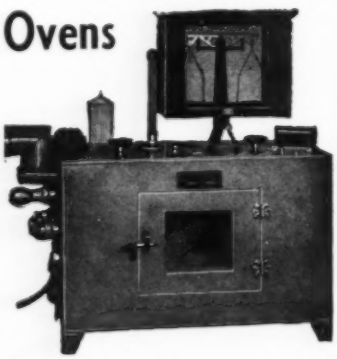
Textile Testing Ovens



For *accurate* testing of water content in yarn. The 8-basket oven, with 3" x 4" baskets, may be changed to 6 baskets, 4¼ x 4¼" both 6" deep. Occupies table space 20" x 40".

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Baskets are designed specially for each class of work. Write for details on EMERSON OVENS to fit your process.

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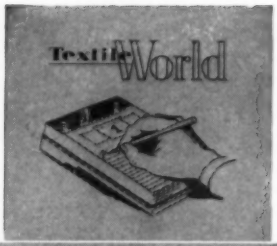
177 Tremont St. Melrose 76, Mass.



CALENDAR

January

Plant Maintenance & Engineering Show, Convention Hall, Philadelphia, Pa., Jan. 23 to 26.

National Cotton Council of America, annual meeting, The Buena Vista Hotel, Biloxi Miss., Jan. 30 & 31.

February

AATCC, Pacific Southwest Sect., Gourmet Restaurant, Beverly Hills, Calif., Feb. 6.

Seventh Annual Cotton Research Clinic, Pinehurst, N. C., Feb. 15 to 17.

March

ASTM, Committee D-13, spring meeting, Warwick Hotel, New York, N. Y., March 13 to 16.

Textile Research Institute, annual meeting, Hotel Commodore, New York, N. Y., March 22 and 23.

Southern Textile Methods and Standards Association, spring meeting, Clemson House, Clemson, S. C., March 22 & 23.

April

American Cotton Manufacturers Institute, annual meeting, Hollywood Beach Hotel, Hollywood, Fla., April 5 to 7.

Alabama Cotton Manufacturers Association, annual convention, Buena Vista Hotel, Biloxi, Miss., April 11 to 13.

National Knitted Outerwear Association, Waldorf-Astoria Hotel, New York, N. Y., April 18 and 19.

Phi Psi Textile Fraternity, annual convention, Alabama Polytechnic Institute, Auburn, Ala., April 19 to 21.

Cotton Manufacturers Association of Georgia, annual convention, Emerald Beach Hotel, Nassau, Bahama Islands, British West Indies, April 25 to 28.

National Association of Hosiery Manufacturers, annual convention, Boca Raton Hotel and Club, Boca Raton, Fla., April 28 to May 1.

May

The Fiber Society, spring meeting, The Clemson House, Clemson, S. C., May 2 and 3.

Southeastern International Industrial Exposition, Lakewood Park, Atlanta, Ga., May 18 to 25.

Tufted Textile Manufacturers Association, national meeting, Cavalier Hotel, Virginia Beach, Va., May 31 to June 2.

June

Materials Handling Institute Exposition of 1956, Public Auditorium, Cleveland, Ohio, June 5 to 8.

National Association of Hosiery Manufacturers, and Hosiery Industry Conference, annual meeting, Hotel Roanoke, Roanoke, Va., June 14 to 16.

September

The Fiber Society, fall meeting, Warwick Hotel, New York, N. Y., Sept. 6 & 7.

AATCC, national convention, Waldorf-Astoria Hotel, New York, N. Y., Sept. 10 to 12.

October

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 1 to 5.

ASTM, Committee D-13, fall meeting, Warwick Hotel, New York, N. Y., Oct. 16 to 19.

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 206

cations that require a smooth-head fastener, pleasing appearance, safety, or tight clearances. They are available in sizes from No. 4 wire to ⅝-in. dia.

Circle T-34 on Reader-Service Card

Reel for Two Hoses

A hose reel that handles two hoses at once has been designed by Clifford B. Hanney & Sons, Inc., Westerlo, N. Y. For rewinding the hoses, the reel can be equipped with an electric motor, a compressed-air motor, or hand crank.

Circle T-35 on Reader-Service Card

Scale for Easy Reading

A floor scale with figures large enough to be read across an average room is made by The Howe Scale Co., Rutland, Vt. The capacity of the line of scales begins at 1,200 lbs. and goes through 2,400 lbs.

Circle T-36 on Reader-Service Card

Radio for Fork Trucks

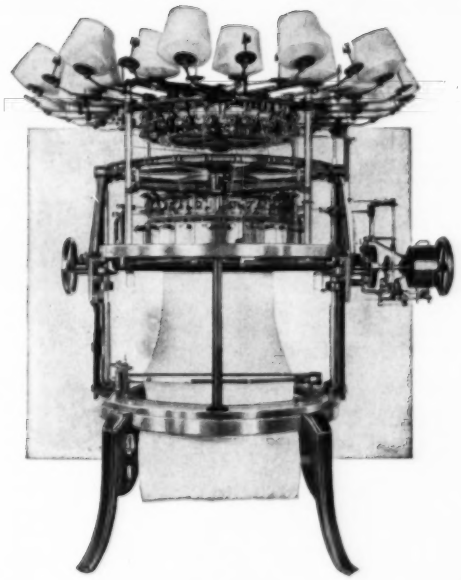
A two-way radio for fork trucks has been announced by Radio Corp. of America, Camden 2, N. J. With the device, the truck driver can be reached instantly no matter where he is working.

Circle T-37 on Reader-Service Card

ORLON "Goes to Town"

when produced on a

WILDMAN INTERLOCK



Wildman Interlock Machines are completely assembled and adjusted at the factory, and can quickly be set up and running in your mill without calling on erecting mechanics.

Orlon and other synthetics — by themselves or in combination with natural fibers — are knit to look their best on this highly versatile and productive machine. The increasing demand for more and more varieties of knit sweaters, sport shirts, gloves, underwear and dress fabrics will keep your Wildman Interlocking Machines profitably busy for years to come — especially when you compare their output with production and operating costs!

Available in all popular sizes from 10″ to 30″ and furnished in all cuts — 10 to 24 needles per inch. Belt or individual motor drive. Inquire today for complete information.

WILDMAN *makes the machines that tend to their own knitting.*

WILDMAN MFG. COMPANY, NORRISTOWN, PA.

Manufacturers of: FULL FASHIONED HOSIERY MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS

With its huge and versatile production facilities, Kennedy is rapidly becoming a leading supplier of packaging to the textile industry. Skilled Kennedy Engineers are near at hand in every major city, and a mile long line of men and machines stands ready to produce your requirements.

Whether your problem is protection or sales appeal Kennedy can find the answer. Plain or printed papers, plastics and foils of all descriptions—hand or machine work . . . regardless of the materials and methods involved, here is textile packaging to precisely fit your needs.

Send this coupon today and learn how Kennedy packaging can serve you.

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☐ Have a Packaging Engineer call

☐ Send me information regarding packaging of (product)

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SHELBYVILLE 7, INDIANA

NEWS about SUPPLIERS

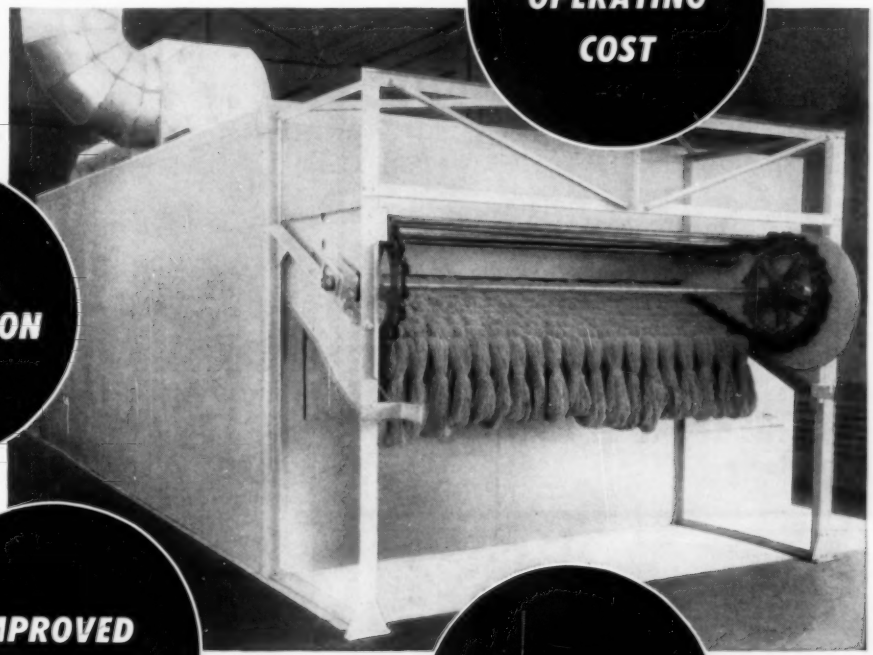
ALLEN BEAM CO., New Bedford, Mass.—Has appointed J. Fred Timms, Spartanburg, S. C., as its representative in North and South Carolina for warper beams, beam heads, and loom beams. . . . **AMERICAN BEMBERG CORP.**, New York, N. Y.—Has transferred Lon Nave to New York, where he will work on new sales developments and serve as technical adviser to the sales department. . . . **AMERICAN CYANAMID CO.**, New York, N. Y.—Has appointed Howard A. Blyth assistant to the general manager of the Organic Chemicals Div. . . . **AMERICAN RADIATOR & STANDARD SANITARY CORP.**, New York, N. Y.—Has formed the Ross Heat Exchanger Div. to carry on the operations in the heat-exchanger field formerly conducted by Kewanee-Ross Corp. . . . **BRUSH ELECTRONICS CO.**, Cleveland, Ohio—Has named John H. Harris vice president in charge of planning. Wallace T. Gray has been named general works manager. . . . **CELANESE CORP. OF AMERICA**, New York, N. Y.—Has elected Dr. Robert T. Armstrong vice president and technical director. Dr. Bruce B. Allen has been promoted to technical director of the Textile Div. . . . **CLARK EQUIPMENT CO.**, Battle Creek, Mich.—Has appointed J. William Kelly sales manager of the Electric Truck Section, Industrial Truck Div. . . . **COLE ENGINEERING CORP.**, Columbus, Ga.—Has named Wilton Todd sales representative for the Carolinas Div. . . . **DAYTON RUBBER CO.**, Dayton, Ohio—Has started production in its new plant in Atlanta, Ga. The new Holfast division will manufacture industrial tapes and natural- and synthetic-rubber rollers. . . . **DEERING, MILLIKEN & CO., INC.**, New York, N. Y.—Will license the manufacture of Agilon yarn products if stipulated quality standards are met. . . . **DODGE FIBERS CORP.**, Hoosick Falls, N. Y.—Has been incorporated to manufacture and sell products made from glass fibers coated with plastic resins. Cleveland E. Dodge, Jr., heads the new concern. Directors are: Cleveland E. Dodge, Henry M. Dodge, James H. Hunter, and Gordon W. Phelps. . . . **DOW CORNING CORP.**, Midland, Mich.—Has elected Olin D. Blessing as vice president. . . . **DUPLAN CORP.**, New York, N. Y.—Has appointed William A. Wood, Jr., sales manager of the Throwing Div. . . . **GENERAL ELECTRIC CO.**, Sche-

CLARENCE R. SIKES (left) has been named assistant manager of the Spindle Div. of Marquette Metal Products Co., Cleveland, Ohio. G. STEWART PARKER (center) has been named sales-staff manager of Pneumafil Corp., Charlotte, N. C. CARLTON E. OLIVER (right) has been named sales engineer at Roberts Co., Sanford, N. C.

Put a PROFIT in your yarn drying!

LOW OPERATING COST

EASIER INSTALLATION



IMPROVED HOUSING

RAPID DRYING

Proctor Automatic Skein Yarn Dryer with Two-Way air circulation, drying dyed carpet yarn.

PROCTOR DRYERS for skein yarn

Regardless of your output, there is a Proctor Yarn Dryer with the right capacity to make your drying profitable. Truck Dryers for skeins and cakes, or Automatic Dryers for continuous operation, both feature controlled air circulation to provide the *greatest drying uniformity obtainable*. Cotton, wool, silk, or synthetics can be dried at fastest possible rates—show substantial savings in time, labor, and steam requirements. And, as with all Proctor equipment, you can depend on performance guaranteed in terms of the finished product produced. Investigate these profit opportunities now—write today for latest information bulletins.

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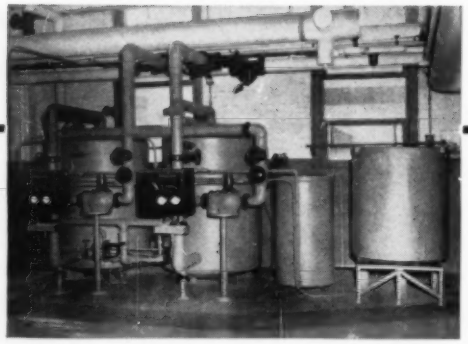
AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR PRODUCING TUBULAR KNITS • EQUIPMENT FOR "SEDMANIZED" ® SHRUNK-TO-FIT FABRICS • CARPET DRYERS

Proctor

PROCTOR & SCHWARTZ, Inc.

Manufacturers of Textile Machinery and Industrial Drying Equipment
Philadelphia 20, Pennsylvania



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CLEAR-IRON FREE 100% SOFT WATER

Often For As Little As 1¢ per 1000 Gallons

Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

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EMPIRE TEXTILE MILL CRAYON
The result of many years of careful study and experiment to meet the particular requirements of the Textile Industry . . . Available in 18 Colors and in Two Sizes! Write for colorful marking guide. Dept. T-8
THE AMERICAN CRAYON COMPANY
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EMPIRE TEXTILE MILL CRAYONS
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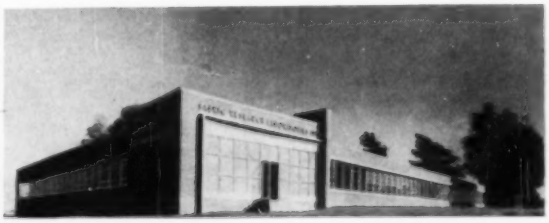
NEWS ABOUT SUPPLIERS Continued

nectady, N. Y.—Has produced an industrial motion picture entitled, "This is Automation," as the latest addition to its "More Power to America" series. The new film illustrates the advantages of continuous automatic production. The film and accompanying literature are available on a loan or cost basis. . . . **GRATON & KNIGHT CO.**, Worcester, Mass.—Has named Ed Pickett district sales supervisor for all products sold in the southeastern United States. William S. Johnstone has been named sales representative for the South Carolina and east Georgia area. . . . **HILTON-DAVIS CHEMICAL CO.**, Cincinnati, Ohio—Has appointed Willard L. Sharp manager of sales of the textile division in the mid-Atlantic states. . . . **INDUSTRIAL RAYON CORP.**, New York, N. Y.—Has named Marian Romer to its merchandising division. . . . **LENKOTEX CO., INC.**, New York, N. Y.—Has been appointed agent in the United States

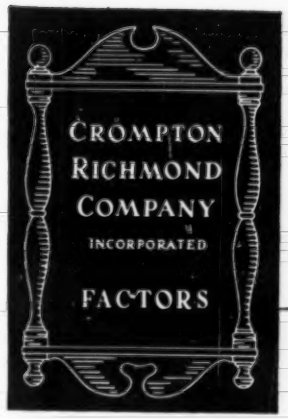
WILLIAM E. STUBBINS (left) has been appointed New England representative for Van Vlaanderen Machine Co., Paterson, N. J. HAROLD L. RIEG (center) has been named director of dyestuff sales and branch operations of National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y. Dr. Oliver M. Morgan (right) has been named director of chemical sales for National Aniline Div.

and Canada for H. Schirp, Machine Factory & Foundry, Wuppertal-Vohwinkel, West Germany. . . . **MALINA CO.**, New York, N. Y.—Has moved to new offices at 125 W. 41st St., New York. . . . **METLON CORP.**, New York, N. Y.—Has doubled the production space of its Stamford, Conn., plant. . . . **MONSANTO CHEMICAL CO., PLASTICS DIV.**, Springfield, Mass.—Has named Edmond S. Bauer assistant director of sales and Thomas W. Sears sales manager for industrial resins. . . . **NOPCO CHEMICAL CO.**, Harrison, N. J.—Has named James F. Cairns and Robert A. Jones sales representatives for the Textile Chemicals Div. . . . **CHAS. PFIZER & CO., INC.**, New York, N. Y.—Has appointed Paul E. Weber sales manager of the Chemical Sales Div. . . . **RADIANT HEAT ENTERPRISES, INC.**, Springfield, N. J.—Has been organized and is marketing the electro-ceramic radiant heater designed by Bruce Boden. . . . **UNITED STATES RUBBER CO.**, New York, N. Y.—Has appointed Kenneth H. Barratt a sales representative in the latex and lotol department of the Naugatuck Chemical division. . . . **YALE & TOWNE MFG. CO.**, Philadelphia, Pa.—Has named Paul R. Minich, Jr., general sales manager of the Materials Handling Div.



FABRIC RESEARCH LABORATORIES, INC., recently started operations in this new laboratory and office building in Dedham, Mass. The new building houses laboratories devoted to physics, engineering, chemical, and pilot-plant operations.

The Maximum Factor



No matter how closely you can guess your yearly volume – you can't guess *when* it will come . . . *how* it will come . . . from where . . . and at what profit margin. But one thing you are sure of – you must be ready for any emergency.

If you're Factored by Crompton, your capital takes on maximum liquidity. Because we transpose your receivables into an immediate and continuous flow of cash. Thus, in the uncertainties of business, Crompton provides you with a dependable factor. We also relieve you of all credit risks and the clerical cost involved in receivable bookkeeping and collection.

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CROMPTON-RICHMOND CO., INC.
1071 Avenue of the Americas, New York 18, N. Y.
Crompton-Richmond-Joel Hurt Co.
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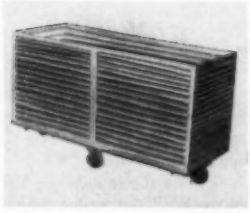
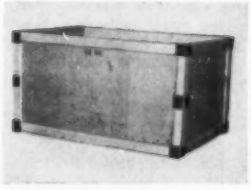
MATERIALS HANDLING EQUIPMENT . . .

Built to Specifications — LIGHT or HEAVY Construction





DRAWINGS and BLUEPRINTS SUBMITTED WITH ALL QUOTATIONS IF REQUIRED

TRUCKS

Vulcanized Fibre for Roving, Doffing, and Yarn • Galvanized Steel and Mild Steel for Roving, Yarn and Battery Filling • Aluminum and Stainless Steel for Yarn, Conditioning, Dyeing, Finishing, etc.

BOXES

Vulcanized Fibre for Toteing and General Mill Use • Galvanized and Mild Steel for Filling; Also Quill Cans with Side or Straight Lip • Aluminum and Stainless Steel for Yarn, Conditioning, Dyeing, Finishing, etc.

MISCELLANEOUS

Cloth Trucks • Platform Trucks • Skids • Dollies • Cone Trucks • Pin Trucks • Triple & Double Deck Trucks for Transporting Boxes • Steaming & Conditioning Trucks • Work Benches & Tool Boxes • Cabinets • Cheese Trucks • Creel Trucks • Warp Beam Trucks • Cloth Inspection Tables • Quill Can Racks • Wood Trucks of Oak, Maple or Cypress • Tanks, Steel - Stainless & Aluminum • Boxes - Storage, Electrical, Material • Vats - Cleaning, Dyeing, Washing • Stainless Steel Vats & Tubs • Dust Separators • Material Conveying Pipe Systems • Hoods & Exhaust Systems • Ventilators • Belt Guards • Hoppers and Storage Bins.

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At last--an entirely *new* Slasher Cloth, with a well-cushioned body that assures far better slashing of yarn . . . unexcelled starch penetration . . . and greater resistance to abrasion! Extra high tensile strength minimizes tearing. Chemically treated--*at your option without extra charge*--to hold shrinkage at a minimum . . . combat chemical attack and increase service life. Made only from precision-blended, long length, finely selected wools, with rigid quality control in manufacture.

. . . and for *All* Your Industrial Textile Requirements

✓ **CLEARER CLOTH** . . . all wool or cotton back; highest quality—yet, low in price.

✓ **ROLLER CLOTH** . . . complete range of types, sizes, weights; all wool or part cotton.

✓ **LAPPING CLOTH** . . . cotton warp; either all wool, or part synthetic filling.

✓ **OTHER SPECIALTY WOVEN FABRICS** . . . developed at your request.

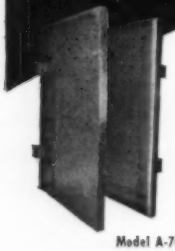
KENWOOD TEXTILE PRODUCTS

NOONE INDUSTRIAL FABRIC DIV. KENWOOD MILLS

Peterborough, New Hampshire

The oldest manufacturer of woven industrial fabrics in America

for the TEXTILE INDUSTRY . . .



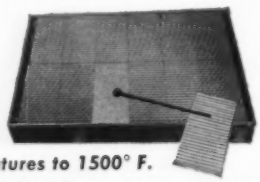
Model A-700

Thermomat RADIANT PANELS

Thermomat radiant panels are custom-made to the requirements of the textile industry and provide uniform, controlled temperatures from zero to 700° F. (See Model A-700, pictured.) Special models, which provide temperatures to 1000° F. are also available.

Suggested uses: Heat setting, heat stretching, tenter preheating, curing resin finishes, preheating and heating after treatment in dyeing Dacron with vat acid, permanent calendering and embossing.

Thermomat CERAMIC BLOCK High Temperature HEATER



for uniform temperatures to 1500° F.

Thermomat CERAMIC BLOCK HEATERS, of heat-resisting ceramic material, are of blocks which may be multiplied in multiples of 5½" x 11¾" to units most nearly to required heat area dimension.

Closely coiled elements in the block, on ½" centers, eliminate hot spots and allow maximum watt density where high temperatures are necessary. Output can be controlled to 100% of watt density.

THERMOMAT COMPANY, Inc., 300 MAPLE AVE., TRENTON 8, N. J.

Gentlemen: Without obligation, please send us literature on THERMOMAT RADIANT PANELS and CERAMIC BLOCK TEMPERATURE HEATERS for the textile industry.

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Firm_____

Address_____

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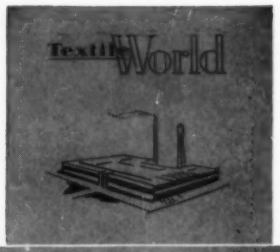
Thermomat CO., Inc. 300 MAPLE AVENUE, TRENTON 8, N. J.



NEWS about MILLS

COTTON MILLS

American Thread Co., Los Angeles, Calif., has moved its industrial sales and service division to 1310 S. Los Angeles St.

Bates Mfg. Co., York Div., Saco, Me., has installed new spinning frames as part of a $250,000 modernization program.

Clarksville Mill, Clarksville, Ga., has completed a 5,000-sq.-ft. addition to its slasher room and an 18,000-sq.-ft. addition to its weave room.

Deering, Milliken & Co., Inc., New York, N. Y., has completed a 15,000-sq.-ft. addition to its Drayton Mill, Spartanburg, S. C. Additional cards have been installed.

Florence Cotton Mills, Florence, Ala., has started a $200,000 expansion program. A 16,000-sq.-ft. addition is being built, and new machinery will be installed.

Gaffney Mfg. Co., Gaffney, S. C., is expanding the present air-conditioning system in its plant.

Indian Head Mills, Inc., New York, N. Y., has leased space for executive and sales offices in the building that is to be constructed at 111 W. 40th St.

Kendall Co., Boston, Mass., has purchased the Andrews-Alderfer Co., Akron, Ohio, manufacturers of foam-fabric materials.

Linway Mfg. Co., Inc., Atlanta, Ga., recently organized, has purchased Palmetto Cotton Mills, Palmetto, Ga. New twisters are being installed to make plied yarns.

Mooresville Mills, Mooresville, N. C., has moved its New York, N. Y., offices to 1430 Broadway.

Pepperell Mfg. Co., Boston, Mass., will move its general sales office to 111 W. 40th St., New York, N. Y., when the new building that is to be constructed at that location is completed.

Pine State Yarn Mills, Troutman, S. C., is building an addition to its mill and a new warehouse. New machinery to produce cotton backing yarns for sweat shirts will be installed in the addition.

Plantation Laces, Inc., Coventry, R. I., has been incorporated to manufacture lace.

Rowan Cotton Mills, Salisbury, N. C., has ordered $300,000 worth of machinery from Saco-Lowell Shops, Boston, Mass. Included in the order are Model 56 drawing frames for 64 deliveries and Model FS-2 roving frames.

J. W. Sanders Cotton Mill, Starkville, Miss., has been sold to Joe L. Moore Co., Gadsden, Ala.

Smitherman Cotton Mills, Troy, N. C., has purchased the Greenwich Print & Dye Works, East Greenwich, R. I. Paul Fabian will continue as general manager.

Wellington Mills, Anderson, S. C., has ordered 44 new Draper X-2 looms.

LARGE PACKAGES HAVE ADVANTAGES

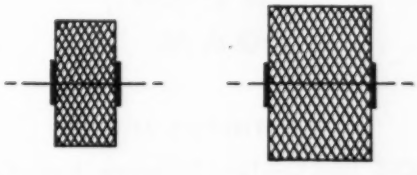
in the steps which FOLLOW THE SPINNING

SPINNING

12" Bobbin — 3" Ring — 12 oz. Bobbin
= 1.33 Bob/lb. — 15,000 Yds.
9" Bobbin — 2" Ring — 3.85 oz. Bobbin
= 4.16 Bob/lb. — 5,000 Yds.

3 TIMES As Much Yardage On Bobbin

SPOOLING

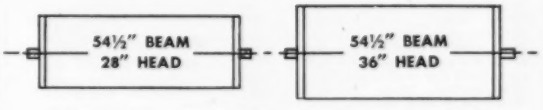


TYPE "C" CHEESE	TYPE "D" CHEESE
2.38 LBS.	6.00 LBS.
48,000 YDS.	120,000 YDS.

2.5 TIMES

AS MUCH YARDAGE PER CHEESE

WARPING



28" BEAM	36" BEAM	40" BEAM
530 LBS.	875 LBS.	1,050 LBS.
24,000 YDS.	40,000 YDS.	40,000 YDS.
445 ENDS	441 ENDS	529 ENDS
BEAMS PER CHEESE	BEAMS PER CHEESE	BEAMS PER CHEESE
TYPE "C"-2	TYPE "C"-1	TYPE "C"-1
TYPE "D"-5	TYPE "D"-3	TYPE "D"-3

SLASHING

Assuming 1,200 yds. per Loom Beam

28" BEAM	36" BEAM	40" BEAM
20 Loom Beams Per Set	33 Loom Beams Per Set	**39** Loom Beams Per Set

Average Slasher Creelings per 120-hr. Week

5.68	3.67	**3.16**

TWISTING

2.38 LB. CHEESE	6.00 LB. CHEESE
48,000 YDS. PER CHEESE	120,000 YDS. PER CHEESE

2.5 TIMES

AS MANY BOBBINS CAN BE TWISTED PER CREELING

Note: 24s Yarn Assumed in All Comparisons

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

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To meet your special requirements, ask for information on Heavy Duty Model — also Utica Individual Roll Winders and Strip Cutters.

1 machine does the work of 2

THIS fast-producer has all the advantages of two machines, but uses the floor space of just one. Cuts light, medium, or heavy weight, both straight and bias fabrics. Cutter and Winder can be run at the same time. Rigidly constructed for long, trouble-free operation. Has measuring scale for cutting accurate rolls. It's safe—knife, grinding wheel, all gears and sprockets are well-guarded. Equipped with Veeder Root yardage counter. Made in 40, 45, and 55 inch width machines. Make your own bindings—as you need them—from the same material as your product—at lower cost. Write today.

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Builders of Textile Machines Since 1903

Does your condenser tape require oiling?

Oil can create streaks in the finished fabric.

See page 194 of this issue for a new tape that requires no oil.

STATIC!

You can eliminate costly static from warpers, slashers, cards, and other machinery. The SIMCO "Midget" guarantees to be the most effective, yet least expensive static eliminator! Write for information.

the SIMCO company

920 Walnut Street, Lansdale, Pa.

WOOLEN AND WORSTED MILLS

Bell Co., Worcester, Mass.—Controlling interest in this company has been purchased by James Axelrod & Associates and M. Leonard Lewis, Pawtucket, R. I.

F. C. Huyck & Sons, Rensselaer, N. Y., has broken ground in Aliceville, Ala., for a new $3,500,000 plant. Plans call for this new unit to be completed by June.

North Star Woolen Mill Co., Lima, Ohio, is now making blankets in a unit of the former Goodall-Sanford Mills, Sanford, Me. The entire operation is being transferred from Lima to Sanford.

Pendleton Woolen Mills, Pendleton, Ore., is building a 40,000-sq.-ft. unit at Milwaukee, Wis. The $275,000 building will house the shirt operations of the company. Future plans call for two additional buildings, each containing 20,000 sq. ft.

Reedsburg Woolen Mills, Inc., Reedsburg, Wis., has added 1,500 sq. ft. of floor space to its plant. The company has installed 12 automatic looms.

SYNTHETICS MILLS

Alkahn Silk Label Co., Paterson, N. J., has purchased the Holland Woven Label Co., Williamsport, Md.

Cheraw Weaving Mills, Cheraw, S. C., is building a 10,000-sq.-ft. addition to its weaving mill. The additional space will be used for the finishing and inspection operations.

Robison Rayon Co., Pawtucket, R. I., is building a plant at Montezuma, Ga., to make novelty twist yarns. Dennie E. Shea, Jr., will be resident manager; Frank S. McCleland, Jr., will be superintendent.

Tait Yarn Co., Lincolnton, N. C., is installing 1,000 spindles as part of an expansion program.

KNITTING MILLS

Adams-Millis Corp., High Point, N. C., is installing 90 420-needle machines as part of an expansion in the women's seamless nylon division. The cost will be $300,000.

Charles H. Bacon Co., Lenoir City, Tenn.—The cotton-spinning-mill operation of this company has been purchased by Wilson Lewith Machinery Corp., Charlotte, N. C. No change will be made in the present hosiery operation.

G. W. Borg Corp., Dalavan, Wis., is building a three-story addition to its mill. The new addition will contain 50,000 sq. ft. of floor space.

William Carter Co., Needham Heights, Mass., is expanding its plant to increase shipping, boxing, and warehouse space by 70%.

Catalina, Inc., Los Angeles, Calif., is building a 24,000-sq.-ft. mill at Fullerton, Calif. The cost will be $250,000. Completion is expected early this year.

Diamond Hosiery Corp., High Point, N. C., is building a $1,000 addition to its mill.

Folsom, N. J.—A seamless looping and mending plant has been opened here by Bessie Williams and Dottie Dean. The owners plan to expand the present facilities.

Holeproof Hosiery Mills, Ltd., London, Ont., has transferred its full-fashioned-hosiery operations from London to Sherbrooke, Que.

Jantzen, Inc., Portland, Ore., is constructing an addition to its Seneca, S. C., mill. Com-

CARTER TRAVELERS

ARE PRECISION MADE....

To insure spinning perfection (assured through constant testing)

Yes, Carter Travelers are precision made, and precision tested, by a modern metallurgical laboratory. This guarantees absolute uniformity of weight, temper and shape of Carter Travelers. Precision-matching to expensive rings means money-saving reductions of wear and cuts down time to an absolute minimum.

At every step of manufacturing, these precision travelers are constantly tested to assure maximum spindle speeds, smoother spinning, and more pounds per cone. To increase your production, and cut your costs, insist on Carter Travelers!

CARTER TRAVELER COMPANY

Division of A. B. CARTER, INC., GASTONIA, N. C.

Manufacturers of The Boyce Weavers Knotter

REPRESENTATIVES

R. A. Haynes, Special Representative.....114 W. Fifth Ave., Gastonia, N. C.
W. L. Rankin.....501 S. Chester St., Gastonia, N. C.
D. E. Phillips.....Rome, Georgia
P. L. Piercy.....128 Hudson St., Spartanburg, S. C.
J. R. Richie.....3014 Lewis Farm Road, Raleigh, N. C.
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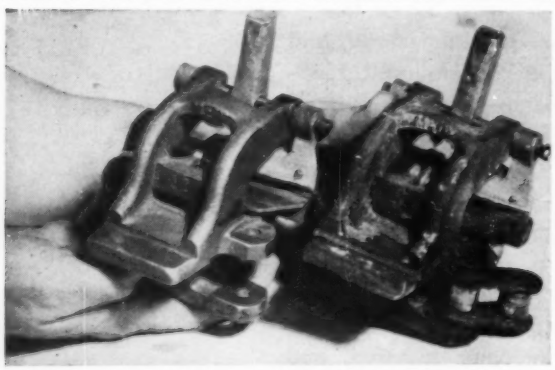
THE "RETRACTABLE END DOOR"
Which eliminates sewing of heads on bales

FOR . . .
Garnett, Waste, Shoddy, Bolt Goods, Rags, etc.

TO PRODUCE . . .
DENSER, NEATER, HEAVIER BALES

Write for Catalog Illustrating our Complete Line of Single and Double Chamber Downstroke, Openside Downstroke, and Upstroke Baling Presses

CONSOLIDATED BALING MACHINE CO.
Sales Division of
N. J. Cavagnaro & Sons Machine Corp.
Since 1909
404-406 Third Avenue Brooklyn 15, New York



CLEANING TENTER CHAINS? Look at this — two links from the same chain, but the one on the left has just been cleaned in a boiling solution of Oakite Stripper R-6. All oil, grease, and lint soaked off—and no scraping or brushing required.

Try it on your tenter chains. Just ask your local Oakite Technical Service Representative, or write, Oakite Products, Inc., 26C Rector St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS · METHODS · SERVICE
SCIENCE

Technical Service Representatives in Principal Cities of U. S. and Canada

NEWS ABOUT MEN Continued

pletion is expected soon.

Kings Mountain Knitting Co., Inc., Kings Mountain, N. C., has been incorporated by Ernest R. Warren and Helen Ratchford, Gastonia, N. C., and James M. Dickson, Clover, S. C. Capital is listed at $100,000.

Lenoir Hosiery Mills, Inc., Lenoir, N. C., has installed a battery of new seamless machines. The company will spend an additional $4,500,000 for seamless equipment.

Penn Maid Hosiery Co., Reading, Pa., is installing an oil-fired furnace. Cost is $5,228.

Sharon Kay Hosiery Mills, Inc., and **Constant Hosiery Stores**, Milwaukee, Wis., have merged. Officiers are: M. Jack Constant, president and treasurer; Jack Russell, vice president and assistant treasurer; John Bosshard, secretary and second vice president.

DYEING & REFINISHING PLANTS

Caledonian Dye Works, Philadelphia, Pa., has completed the installation of its second Fletcher Whirlwind extractor. The extractors are being used in the expanded tape-bleaching and novelty-skein-dyeing departments.

Chwatt Bros., Inc., Brooklyn, N. Y., has started operations in the former Manhattan Yarn Dye & Bleaching Co. Full production is expected shortly.

Decatur Dyeing & Finishing Co. and **T. A. Harris Co.**, Philadelphia, Pa., have merged under the name of Continental Dye Works, Inc. Officers are: Morris C. Furlong, president; George Vonder Lindt, vice president; Theodore M. Baxter, Jr., secretary and general manager; L. G. Ballis, Jr., treasurer.

Duro Finishing Corp., Fall River, Mass., recently completed a 50,000-sq.-ft. addition to its plant.

Fairforest Co., Eagle & Phenix Div., Columbus, Ga., is building a 5,000-sq.-ft. addition. The cost is estimated at $50,000.

Model Dye Works, Woonsocket, R. I., has started operations in its new Sumter, S. C., mill. The new unit replaces the present Rhode Island plant. Key personnel has moved South.

Van Court Andrews and **Clarence Taggart** have been appointed to the executive committee of Riegel Textile Corp., New York, N. Y.

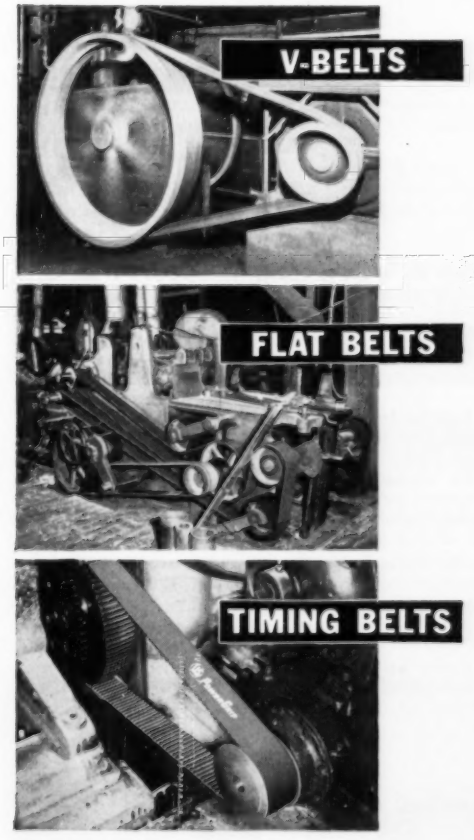
James Axelrod has been elected president of the Bell Co., Worcester, Mass. Other officers elected are: M. Leonard Lewis, vice president; Melvin Sawyer, treasurer; Fisher Abramson, corporation clerk.

Marion W. Beacham has been named supervisor of the Barnwell, S. C., and the Tifton, Ga., plants of Amerotron Corp.

Claude D. Bedell has been named resident manager of Pawtuxet Valley Dyeing Co., Inc., Phenix, R. I.

A complete line of

Flat Belts, V-Belts and Sheaves and "TIMING"® Belts and Pulleys



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U. S. Rubber power transmission technicians are always ready to help you. Get in touch with one of our selected distributors or any of our 27 District Sales Offices or write us at Rockefeller Center, New York 20, N. Y.

MULTIPLE V-BELTS • F.H.P. V-BELTS
SHEAVES • FLAT BELTS AND BELTING
SPECIAL PURPOSE BELTS
PowerGrip **"TIMING" BELTS AND PULLEYS**

V-Belt Sheaves and "TIMING" Belt Pulleys

are tested for static balance and engineered to deliver the high durability and efficiency that are built into every "U. S." Belt.

Mechanical Goods Division

United States Rubber

For more information, write direct or use Reader-Service post card.

Balance?
Yeah Man!
EPI Plastic Bobbins* are running smoothly, even at 15,000 RPM. That's because they are machined on the most sensitive precision equipment and because every EPI Bobbin is dynamically balanced.
*U. S. Patent 2,625,343
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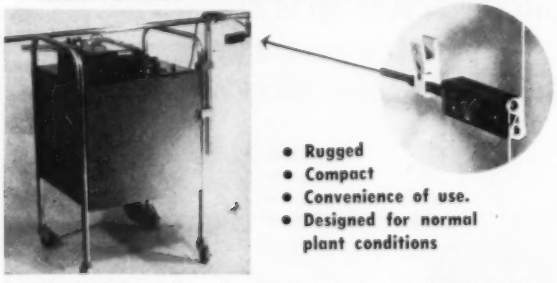
Providence, R. I.
ENGINEERED Plastics
INCORPORATED
Gibsonville, North Carolina

HIGH SPEED RECORDING TENSIOMETER



- Rugged
- Compact
- Convenience of use.
- Designed for normal plant conditions

The High Speed Recording Tensiometer was developed by the Celanese Corporation of America for measurement and proper regulation of yarn tension in the Textile industry.

The instrument has a frequency response up to 120 cycles per second, and a sensitivity as high as four millimeters deflection on a standard direct writing recorder per gram of tension in the yarn. Under normal plant conditions, heavy machine and plant vibrations are cancelled by using two beams with bonded resistance strain gages working to opposition. The record produced is a true record of tension variation only. Stops are provided to prevent over stressing these beams. To use the instrument it is only necessary to place the pulleys over the running yarn and twist the sensing head until the yarn forms an S shape over the pulleys.

As our name implies we also welcome the opportunity to work on custom design and manufacture of testing instruments of all types for individual and general needs.

CUSTOM SCIENTIFIC INSTRUMENTS, INC.

541 Devon Street Kearny, N. J.

NEWS ABOUT MEN Continued

C. G. Burrows has retired as group manager of the Roanoke, Va., and Radford, Va., plants of Burlington Industries.

W. W. Couch has been named vice president of Morganton Full Fashioned Hosiery Co., Morganton, N. C., and Drexel Knitting Mills, Drexel, N. C.

H. Roy Crabtree has been appointed president and managing director of Wabasso Cotton Co. Ltd., Three Rivers, Que. **C. R. Whitehead** has been named assistant general manager.

George A. Cralle has been named a vice president and a director of Durham Hosiery Mills, Durham, N. C.

Walter Danhoff has been named night superintendent of the Fieldcrest Mills, Inc., towel mill, Fieldale, Va.

Harry Davis has been named superintendent of all carding and spinning processes at Huntsville Mfg. Co., Huntsville, Ala. **Rand Lehman** has been named carding overseer.

J. Neal Dow has been named vice president in charge of marketing at Vanity Fair Mills, Reading, Pa. He has also been elected a director and will serve on the executive committee.

Peyton W. Drake has been elected assistant secretary and assistant comptroller of Huntsville Mfg. Co., Huntsville, Ala.

R. G. Emery has retired as executive vice president of J. P. Stevens & Co., Inc., New York, N. Y. He will continue as a director.

J. P. Foster has been promoted to assistant superintendent of the Fieldcrest Mills, Inc., blanket mill, Draper, N. C.

John Gallagher has been named jig and box dryer at Sanco Piece Dye Works, Phillipsburg, N. J.

William S. Garner has been named overseer of the card room in the Monarch Plant of Monarch Mills, Union, S. C. **Jesse P. Walker** has been named card-room overseer in the Ottaray Plant of Monarch.

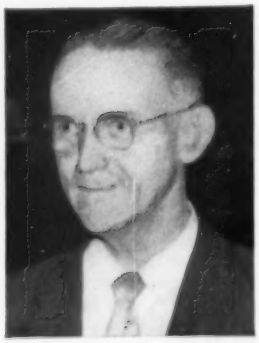
Arthur W. Gionet has been named mill manager of Patchogue-Plymouth Mills, Lowell, Mass.

Lorimer C. Graef has resigned as vice president and general manager of Champlain Spinners, Inc., Whitehall, N. Y.

John K. Houston has been named superintendent of Spray Cotton Mills, Spray, N. C.

Peter Ignasewski has been named overseer of weaving at the Champlain Mill, Winooski, Vt. Others promoted are: **Paul Crowley**, overseer of stock and laying-out blends; **Lawrence Barney**, overseer of picking; **Al** Demers, overseer of carding.

Darrell E. Knox has been elected president of LaFayette Mills, Inc., LaFayette, Ga. Other officers elected are: **William A. Enloe, Jr.**, vice president and treasurer; and **George P. Shaw**, secretary. **T. Cun-**



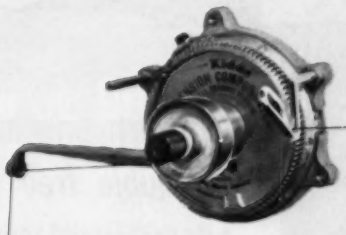
M. W. TUCKER (left) has been promoted to superintendent of Adams-Millis Corp., Kernersville, N. C. P. V. Cox (right) has been promoted to foreman of the machine shop.

TENSION TROUBLES?

Here are 4 mill-tested solutions!

Kidde STANDARD COMPENSATORS

Available in three tension ranges (2 to 50 grams, 10 to 120 grams and 50 to 300 grams), Kidde Standard Compensators may be used in the circular knitting of synthetic yarns and rubber, rubber warping, silk quill winding, and most special applications.



Kidde WARP COMPENSATORS

Creel mounted, the Kidde Warp Compensator is a tension device which is used in commercial beaming, the warp knitting trade, and the weaving industry. It is available in a tension range of from 4 to 22 grams.

Kidde DOUBLE DISC COMPENSATORS

Available in two tension ranges of from 10 to 120 grams and 50 to 300 grams, this Kidde tension device is used mainly in the quill winding of synthetic yarns.

Kidde CORD COMPENSATORS

Available in two ranges of 1 to 7 pounds and 5 to 25 pounds, the Kidde Cord Compensator gives accurate tension control at relatively high tension ranges. It is a highly specialized device which has been designed specifically to meet the needs of industrial textile manufacturers.

More than 500 of the country's leading textile mills now use Kidde Compensators to help them solve tension problems and turn out finer products at less cost.
For more information of how Kidde Compensators can help you, write Kidde today.

Kidde

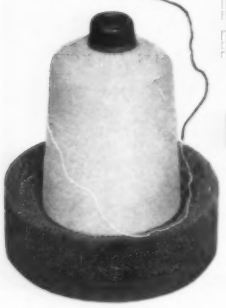
The word 'Kidde' and the Kidde seal are trademarks of Walter Kidde & Company, Inc.

Walter Kidde & Company, Inc.
191 Main Street, Belleville 9, New Jersey

Over 14,000 hours of operation

prove New

KONE KING
Coned Yarn Support



Keeps yarn unwinding *trouble free*

- No more tangled yarn!
- Sizes for every need!
- Low in cost!

AT LAST! Snag-free unwinding of coned yarn! Regardless of the size of cones, yarn cannot slip below the shoulders of cones and become snagged. Tubular knit of patented design keeps thread free until all thread is unwound. Cost is low! For information, write or wire Dept. TW.

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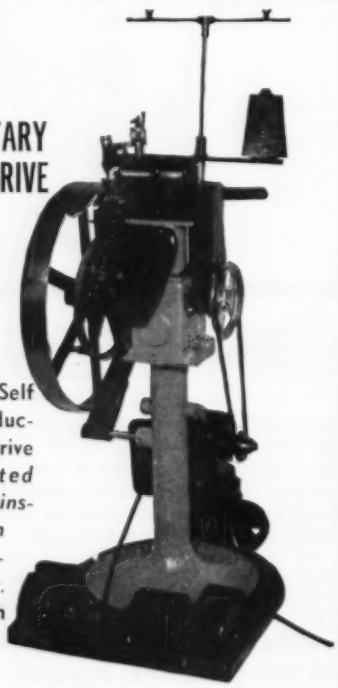
MODEL
8-D-1
PORTABLE ROTARY
WITH MOTOR DRIVE



No exposed gears. Self lubricated gear reduction unit. Chain drive to *Merrow Butted Seaming Head or Dinsmore Single Chain Stitch Head.* Automatic cloth stripper. Wide range of stitch requirements.

DINSMORE MANUFACTURING CO.
BOX 267 SALEM, MASS.

NEWS ABOUT MEN Continued

BERNARD J. RAHILLY has been elected vice president in charge of industrial relations at Chicopee Mfg. Co., New Brunswick, N. J.

ningham Giles, has been named superintendent; **C. C. Stinson,** overseer of carding and spinning; **E. D. Newton,** overseer of weaving; **J. W. Byars,** overseer of the cloth room; **W. L. Swanson,** master mechanic.

Lester Lowery has been appointed plant superintendent of PhilCord Corp., Monroe, N. C.

James W. Macho has been named controller and assistant treasurer of Fox River Valley Knitting Co., Appleton, Wis.

William E. McDaniels has been named production manager at the William Carter Co., Needham Heights, Mass. He succeeds **Paul H. Franz.**

John P. McGivney has been named acting manager of the Automotive Fabric Div. of Sidney Blumenthal & Co., Inc., New York, N. Y. He succeeds **Allan E. Shore,** resigned. **Jerome A. Ciaccia** has been promoted to assistant manager.

Roger J. McNamara has been named product-development manager at Cabin Crafts, Inc., Dalton, Ga.

George J. Meng and **Frederick G. Bollman** have been elected to the board of Berkshire Knitting Mills, Reading, Pa.

Charles H. Moody has been promoted to plant manager of the Dwight Div., Cone Mills Corp., Alabama City, Ala.

Wilbur H. Norton has been elected a director of Plymouth Cordage Co., Plymouth, Mass.

George W. Pierce has been appointed executive director of the tricot and circular-knit-finishing division of American & Efird Mills, Charlotte, N. C.

Elwyn G. Preston, Jr., has been elected a vice president of West Point Mfg. Co., West Point, Ga. **Frank A. Norman, Jr.,** has been named treasurer to succeed Mr. Preston.

Henry A. Reinhardt has been elected vice president in charge of manufacturing at Bigelow-Sanford Carpet Co., Inc., New York, N. Y.

Peter Sarfaty has been appointed assistant manager of the hosiery department of Cannon Mills Co., Inc., Kannapolis, N. C.

Watson P. Schofield has been named resident manager of Dresden Mills, Inc., Dresden, Ohio.

Lorne I. Shantz has been named to the executive com-

T. SCOTT AVARY (left) has been elected president of Wellington Sears Co., New York, N. Y. JAMES A. HORNE (center) has been elected vice president in charge of coarse gray goods. EVERETT H. JOHNSON (right) has been elected senior vice president in charge of sales.

Still on Top!

These Features Mean Eclipse Superiority

1. Completely replaces wooden skewers.
2. Ball bearings minimize friction, resulting in uniform quality of roving.
3. Permits less twist. Tests indicate yarn of more even texture.
4. Creel boards easily cleaned. Overhead suspension leaves open creels. Blowers more effective.
5. Better spinning of spun rayon.
6. Easier creeling; less physical effort and fewer motions required.
7. Improved brake attachment prevents overrun and backlash.
8. Now cadmium-plated and stainless steel balls more rust resistant.
9. Time-tested product—holders in operation for over ten years.
10. Easy to install; practically no upkeep.

ECLIPSE BOBBIN HOLDERS

The many exclusive features built into the Eclipse Bobbin Holder have made it the favorite of many leading textile organizations. They have found in actual operation that the Eclipse Bobbin Holder is outstanding in every way and that the Eclipse reputation for basic quality and goodness is well deserved. If you are interested in modernizing your present plant equipment, you will surely want the finest—and the finest means Eclipse. Investigate today by writing or calling the Eclipse Machine Division direct.

ECLIPSE MACHINE DIVISION of Bendix
ELMIRA, NEW YORK

Does your condenser tape stretch?

Read about the new tape that will not stretch and about its many other qualities.
See page 194 of this issue.

CALDWELL TANKS—
First Choice of the Textile Industry!

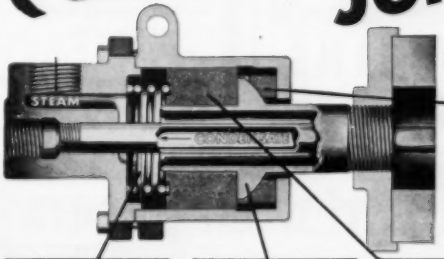
Caldwell offers the industry a complete tank service, including solid Stainless and Stainless-lined wood tanks and tubs, of any shape or size.

If you're thinking of installing or replacing a tank, let our 60 years' experience in building high-grade tanks serve you. *Send for our catalog, today!*

W. E. CALDWELL CO., Inc.
2060 Brook St., Louisville, Ky.

Caldwell TANKS AND TOWERS

Only 4 internal parts in this self-supporting Johnson Joint



1. SEAL RING — of special carbon-graphite. Eliminates packing and oiling.
2. GUIDE — Also of carbon-graphite. Makes joint self-supporting.
3. NIPPLE — Rotates with roll, seals against ring.
4. SPRING — For initial seating only. In operation joint is pressure sealed.

With this 3000 Series Type S-B2 Joint, an assembly plate can be added at any time; it is used with the Johnson Syphon Elbow, to hold internal parts in position when the head is removed. Write for Bulletin No. S-2001.

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slats • picker teeth • lags
plain or pinned.
PLAIN AND SPIKED FEED BOX
aprons
GARNETT AND FLOOR CONVEYOR APRONS
pins • rolls cylinders • tenter plates
plain or pinned.
ROBERT A. MAIN & SONS, INC.
Manufacturers
268 PASCACK ROAD PARAMUS NEW JERSEY
ENGINEERING AND CONSULTING SERVICES ON PICKING AND COARSE CARDING APPLICATIONS

CREATED FOR THE TEXTILE INDUSTRY
the DUROMETER
FOR TESTING WINDING DENSITY
Created to solve the problem of maintaining uniform density for unwinding in later processes, the DUROMETER saves time and money. Tests density of windings on spools, cones, bobbins, cops and package dyeing tubes.
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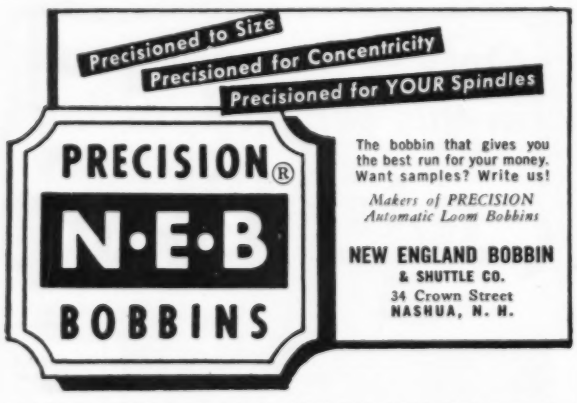
90-35 VAN WYCK EXPRESSWAY, JAMAICA 35, N. Y.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Precisioned for Concentricity
Precisioned for YOUR Spindles
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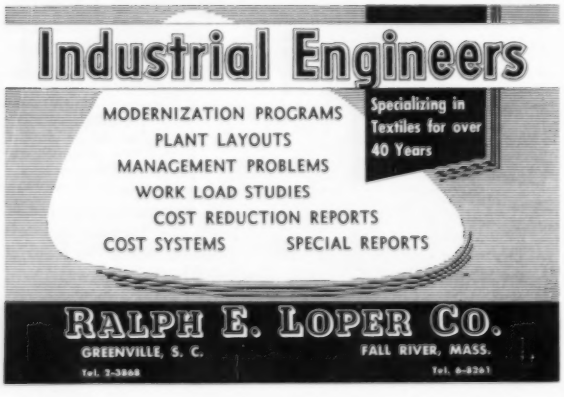


NEWS ABOUT MEN — Continued

mittee of La France Textiles Ltd., Woodstock, Ont. **Harold J. Shantz, Robert L. MacFayden,** and **Carl E. Knechtel** have been elected to the board.

Lynwood Smith has been elected president of Rockford Textile Mills, Rockford, Ill. **Karl M. Whitney** has been elected vice president and **Morris A. Speck** has been elected assistant secretary-treasurer.

Gordon L. Synan has been elected president of Hampton Looms of Virginia, Inc., Bedford, Va.

James P. Truss and **George Winchester** have been elected to the board of Joseph Bancroft & Sons Co., Wilmington, Del.

R. J. Tucci has been named overseer of dyeing at Cold Spring Bleachery, Yardley, Pa.

Eric Ullman has resigned as vice president in charge of fabric production for Bernhard Altmann Corp., New York, N. Y.

Joseph W. Valentine has been elected chairman of the board of Texas Textile Mills, Dallas, Tex.

Forrest Ware has been appointed superintendent of dyeing and finishing at Varel Mills, Inc., Middleway, W. Va.

Rusdell E. Welch has been named treasurer of the Adler Co., Cincinnati, Ohio.

OBITUARY

Robert C. Atherholt, 54, president and general manager of Hampton Looms of Virginia, Inc., Bedford, Va.

George Avery, 54, a director of Granby Elastic & Textiles Ltd., Granby, Que.

H. B. Bradford, vice president and general manager of American Moistening Co., Providence, R. I.

William J. Carney, 85, superintendent of Fuld & Hatch Knitting Co., Cohoes, N. Y.

Herman Cone, 60, board chairman and president of Cone Mills Corp., Greensboro, N. C.

Arthur C. Cook, 77, general manager of West Boylston Mfg. Co., Montgomery, Ala.

Emil J. DesRoches, 53, industrial-relations manager of Pacific Mills, Boston, Mass.

Marcel Durot, 60, vice chairman of the board and retired president of Prouvost Lefebvre Co., Boston, Mass.

Arthur R. Fisher, 68, treasurer and director of Cleveland Worsted Mills, Cleveland, Ohio.

John C. Haggarty, 64, secretary-treasurer of Brook Woolen Co. Ltd., Simcoe, Ont.

Robert E. Henry, 75, retired vice president of the former Dunean group of J. P. Stevens & Co., Greenville, S. C., and past president of the American Cotton Manufacturers Association.

Russell K. Laros, 62, founder and president of R. K. Laros Textile Co., Bethlehem, Pa.

Edwin H. Moore, 48, president of Tower Hosiery Mills, Inc., Burlington, N. C.

James Murphy, assistant superintendent of Sagamore Mfg. Co., Fall River, Mass.

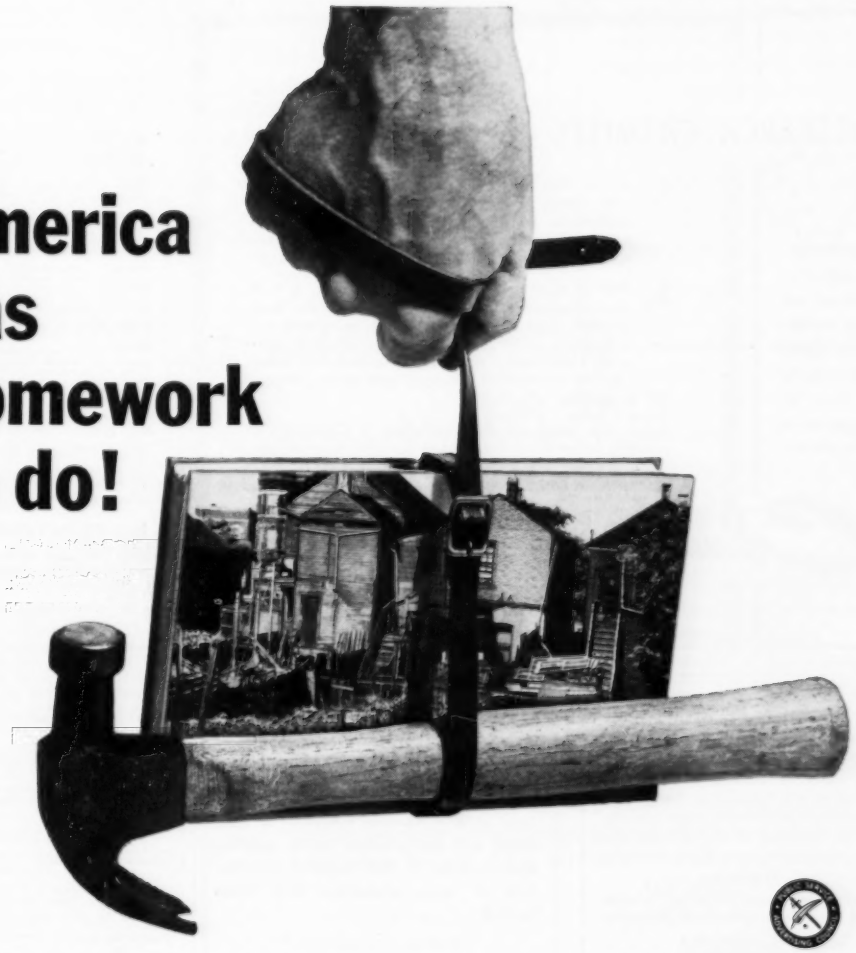
Paul D. Shultz, 61, vice president of Hans C. Bick, Inc., Reading, Pa.

Manuel M. Souza, master mechanic at Sagamore Mfg. Co., Fall River, Mass.

Henry J. Wilkinson, 64, former manager of Charlottesville Woolen Mills, Charlottesville, Va.

Junius W. Woollen, 63, superintendent of Adams-Millis Corp., Kernersville, N. C.

America has homework to do!



THERE'S PROBABLY a lot about your town that makes you want to brag a bit about it.

But there's one thing you *can't* be proud of. And it's a shame you share with just about every other community in America.

The homes where far too many people live are a disgrace. Slums, semi-slums, housing blight are with you. Fixing them up is the homework to be done.

If your town is like most in the U. S., here's what the figures show: 1 out of every 10 homes are rock-bottom slums. Nearly one-half urgently need basic repairs.

But slums are something that is happening on the other side of town, you may say. The problem isn't mine.

Slums are YOUR homework

Distance is no barrier against the threat and cost of housing blight.

Your taxes go up because it takes more money for your town to fight the diseases and delinquency and poverty spawned in the slums. The security of your family goes down because the slum is the natural parent of crime.

Where your business comes in

Every firm has a responsibility toward the town where it's located. Part of it is to support community improvements as any other good citizen would.

Some slums are beyond repair. They must be torn down and a fresh start made. Others can be made to conform to accepted living standards. So it is up to you to get behind every sound program which seeks to provide adequate housing for all our people.

Civic and individual groups must have business backing . . . *your* firm's backing if they are to succeed.

Follow the course of Action!

A group of Americans from every walk of life has joined together in a non-profit organization to combat home and community deterioration, A.C.T.I.O.N., the American Council To Improve Our Neighborhoods.

Send today for a free copy of "ACTION." It explains what A.C.T.I.O.N. is and proposes to do. It lists booklets, research, check-lists, and other material which can help you. Address P. O. Box 500, Radio City Station, New York 20, N. Y.

ACTION

American **C**ouncil **T**o **I**mprove **O**ur **N**eighborhoods

RESEARCH CHEMISTS for CELANESE

1. MS or PhD in physical, or in organic chemistry with strong physical background, 0 to 5 years experience. For fundamental studies on cellulose and its derivatives and in development of manufacturing processes for cellulose derivatives.

2. PhD or equivalent in physical chemistry, 5 to 8 years experience, some of which should have been in fiber research. To assist in planning and coordinating problems in basic fiber research covering relationship of molecular and micro structure to mechanical, thermal and other physical properties.

Please write complete details of background and experience, including initial salary requirements, to J. A. Berg. All inquiries in confidence.

These and other positions are open in Celanese's expanding research laboratories in Summit, New Jersey, a pleasant residential community within 30 miles of metropolitan New York.

Celanese CORPORATION OF AMERICA

Morris Court — Summit, New Jersey

POSITIONS OPEN

We can place—MANAGER asbestos plant; supt. rayon cloth mill (foreign); mgr. large southern cot. mill; supt. knit cloth mill; supt. knit glove mill; supt. silk throwing; supt. synthetic dye, and finish. plant; night supt. woolen mill; asst. supts. (2) cot. mills; asst. supt. cot. dye, and finish.; cot. designers and fabric men for mills also for N. Y. City.

OVERSEERS for—wstd. combing; woven felt finish., card. and weav.; woolen card.; finish. knit and woven fabrics; cot. piece goods finish.; cutting sweaters; win. frame spin.; wstd. card. and scouring; twisting fancy yarns; top blending; cot. weav. Draper looms (Foreign). Dyers, chemists and finishers for technical service work.

SECOND HANDS for—win. frame spin.; win. and wstd. piece goods finish.; cot. rayon spin.; wstd. spin. and twist.; win. weav.

PROJECT ENGINEERS; master mechanics; plant, electrical and mechanical engineers; asst. master mechanic; production and quality control men; chemists and laboratory men for United States and foreign; fabric technician on synthetics; finished cloth inspector; chemical salesman for southern states; time study-industrial engineers; loom fixers; sewing and knit. mach. fixers; Draper loom fixer (foreign).

SEND US YOUR RESUME. Many attractive positions at excellent salaries are open for top-notch men. No fee to be paid unless you accept employment through us. Negotiations are confidential.

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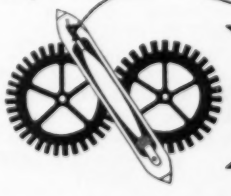

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3—112 spindles
3—128 spindles

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11—Draper 38" Modified D Looms, Motor Drive
52—Draper 40" Modified D Looms, Belt Drive
3—Draper 42" Modified D Looms, Motor Drive
12—Draper 44" Modified D Looms, Motor Drive
38—Draper 46" Model L Looms, Belt Drive
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18—Frames H & B L. D., 5 Frames Roth L. D., 17 Frames Casa Blanca L. D.

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100—Draper 64" Model H Looms, M. D.
193—Draper 44" Model H Looms, M. D.
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43—Draper 42" Model D Cam Looms, M. D.

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1—Butterworth 46" Scutcher
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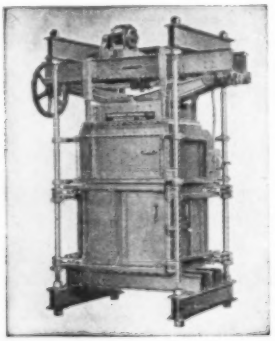

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SPECIAL FEATURES: (1) Easy to load: Individual doors facilitate piling of skeins; after lower doors are closed, top door in front permits complete filling of box. (2) Greater pressure: The toggle-type baler develops more power than other mechanical presses, therefore, produces higher bale density. (3) Speed Press completes its stroke in less than 35 seconds, without complex gear shifts, belt shifts or motor switching. (4) Convenient to burlap: Doors open all around; burlap can be completely sewed on the bale while under compression.

BALE SIZE: For yarn bailing, Model 26-MS, making bales 36" x 24" x 24", is generally accepted as standard, but variations in bale dimensions are obtainable where such appear desirable.

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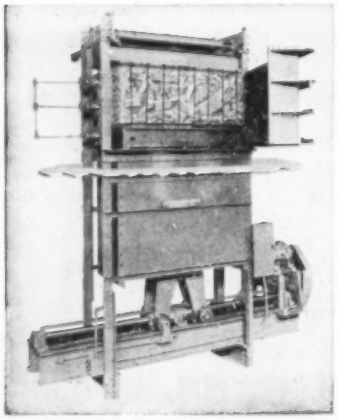
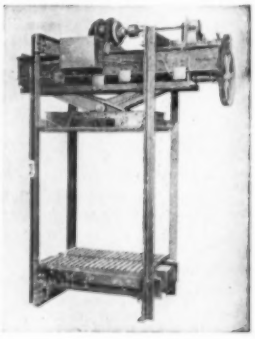
SIZES — TYPES: Built in many box dimensions, one-floor or through floor type, upstroke or downstroke. Can be built with movable boxes, rolling on tracks, utilizing several boxes with one master press.

SPEEDY & POWERFUL: Without special mechanisms or shifting device, and at uniform motor speed, compression platen moves at high speed through the first part of its stroke, gradually slowing down as extreme pressure is applied. On return stroke, action is reversed. High bale production easily obtainable. Utilizing leverage in place of direct pull, toggle presses make tighter bales, with less horsepower, than any other mechanical baler. Upkeep and maintenance are far lower, due to the few moving parts.



Textile plants having special baling-problems are invited to outline their conditions and requirements in detail, so that experienced LOGEMANN baler engineers may make recommendations and offer the proper type of equipment. Inquiries should specify the character of material to be baled, preferred size or weight of bale, and quantity to be baled in a given period of hours.

OPEN BALERS



RIGID CONSTRUCTION: Heavy angle-iron side frames and I-beam stress members insure far greater rigidity than the rod-type corner posts. Drive frame has no swinging members, eliminating complicated belt or electrical connections. Designed with liberal factor of safety —much higher pressure ratings would be permissible.

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PORTABLE TRUCKS: Either type can be built with tracks for portable trucks on which material can be stacked, drawn into press for baling, and finished bale transported to storage or shipping platform.

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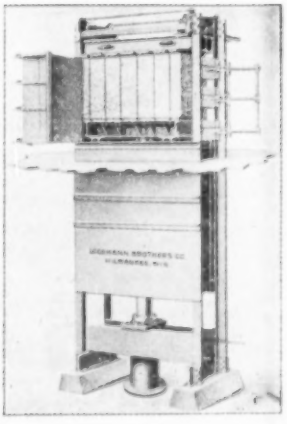
SPECIAL FEATURES: Skilled help or special training not needed to operate these presses with complete safety. No other type produces equal bale density. Yet maintenance is far less. Ram, platens and doors only moving parts. Pressures can be accurately controlled. Doors release and expose three sides of bale for convenient wiring and burlapping.

ALL SIZES: Bale dimensions and weights to meet varying requirements for different materials can be obtained. Either up or down stroke to suit. With pump of proper size and deep press box, extremely high bale outputs are readily attained.



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Lockwood Greene Engineers, Inc.	32	N
Logemann Bros. Co.	234	P
Loper Co., Ralph E.	224	N
Louden Machinery Co.	61	D P
Lubriplate Div., Fiske Bros. Refining Co.	204	N
Luddell Mfg. Co.	167	E
Lunkenheimer Co., The	57	H
Main & Sons, Inc., Robt. A.	224	T
Manhattan Rubber Div.	52	Q
Marquette Metal Prods. Co.	179	T
Mathieson Chemicals Olin Mathieson Chem. Corp.	185	C
M-B Products Co.	238	H
McBride, Ed. J.	6	R
Messe, Inc.	236	P
Minneapolis-Honeywell Reg. Co. Industrial Div.	58-59	K
Monsanto Chemical Co., Plastic Div.	193	C
Mount Hope Machinery Co.	132	E
National Aniline Div., Allied Chem. & Dye Corp.	33	C
National Ring Traveler Co.	22	T
Naugatuck Chemical Div. U. S. Rubber Co.	157	C
New England Bobbin & Shuttle Co.	224	R
Noone Ind. Fabrics Div. of F. C. Huyck & Sons	214	E RT
Oakite Products, Inc.	218	C
Olin Mathieson Chem. Corp. Forest Prods. Div.	181	P
Industrial Chemicals Div.	185	C
Ordnance Gauge Co.	176	L
Penick & Ford, Ltd., Inc.	196	C
Perfecting Service Co.	192	H
Perkins & Son, Inc., B. F.	62	E
Pittsburgh Corning Corp.	187	B
Pneumafil Corp.	141	T
Powell Co., Wm.	150	H
Powell Valves	150	H
Proctor & Schwartz Inc.	211	E R
Raybestos-Manhattan, Inc. Manhattan Rubber Div.	52	Q
Reeves Pulley Co.	170	Q
Refined Products Co.	2nd Cover	C
Reliance Elec. & Eng'g. Co.	21	F Q
Roberts Co.	9	T
Rohm & Haas Co.	171	C
Rollway Bearing Co., Inc.	201	O Q
Rose Co., Bennett	213	P
Rumford Chem. Works	197	C
Ryerson & Son Inc., J. T.	174	O
Saco-Lowell Shops	18, 130	T
Schlafhorst & Co., W.	11	RT
Shore Instrument & Mfg. Co. Inc.	224	K
Simco Co.	216	E L RT

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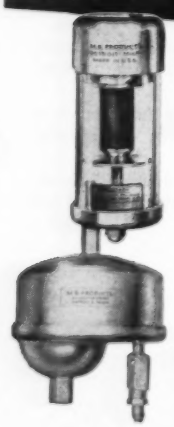
KEEP AIR DRY AT ALL TIMES USE THIS AMAZING COMBINATION AND GUARD YOUR PNEUMATIC SYSTEM



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RIBBON TYPE FILTERING UNIT removes solids .00039 and larger. Transparent plastic bowl makes filtered foreign matter visible. Gives maximum protection to all types of Lint Blowers, Blow-off Hoses and various air-operated controls.

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46 VICTOR AVE., Div. 16
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Sirrine Co., J. E.	3rd Cover	N
Solvay Process Div., Allied Chem. & Dye Corp.	122	C
Sonoco Products Co.	17	T
Southern Shuttles Div., Steel Heddle Mfg. Co.	155	R
Spauling Fibre Co., Inc.	27	P T
Square D Co.	124	F
Stanley Works, The	183	K
Steel Heddle Mfg. Co.	155	R
Stowe-Woodward, Inc.	31	E
Supreme Knitting Mach. Co., Inc.	205	L
Taylor Co., Halsey W.	198	N
Taylor Instrument Cos.	40	K
Taylor Stiles & Co.	202	T
Texas Co., The	4th Cover	M
Textile Machine Works	66	L
Thermomat Co.	214	E
Tompkins Bros. Co.	178	L
Trane Co.	46-47	A
Turbo Machine Co.	5	L
U. S. Rubber Co. Mechanical Goods Div.	219	Q
Naugatuck Chem. Div.	157	C
Universal Winding Co.	146	T
Uster Corp.	149	R
Utica Novelty & Mill Specialty Co.	216	E L
Van Vlaanderen Mach. Co.	161	F
Veeder-Root, Inc.	35	K
WAK Industries	208	K
Wallerstein Co., Inc.	143	C
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West Point Foundry & Machine Co.	2	R
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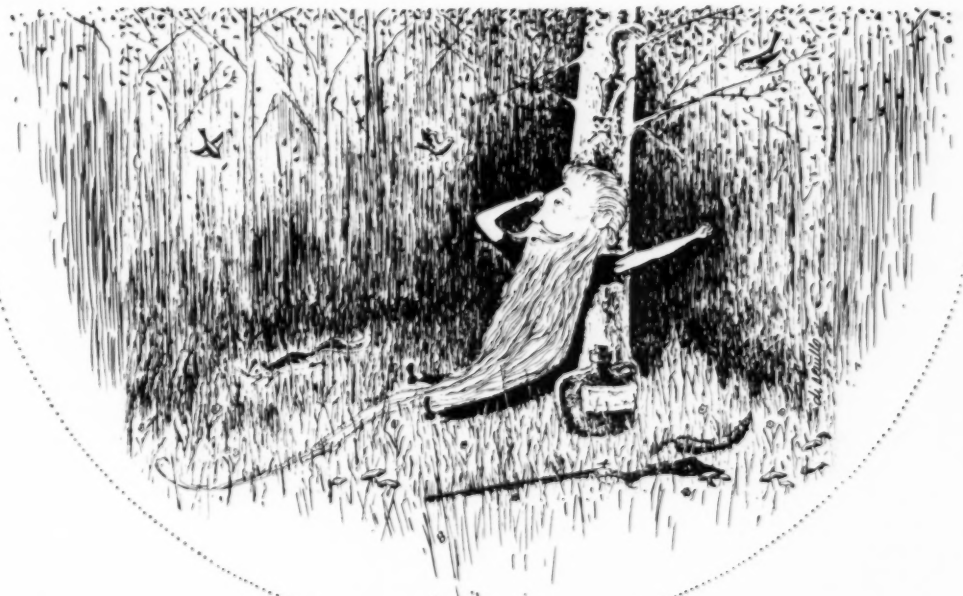
NO TIME FOR NAPPING



Rip Van Winkle took time out to nap . . . and woke up twenty years later! His musket had rusted beyond use. His wife had long since gone her separate way. The world he'd lived in no longer had a place for him.

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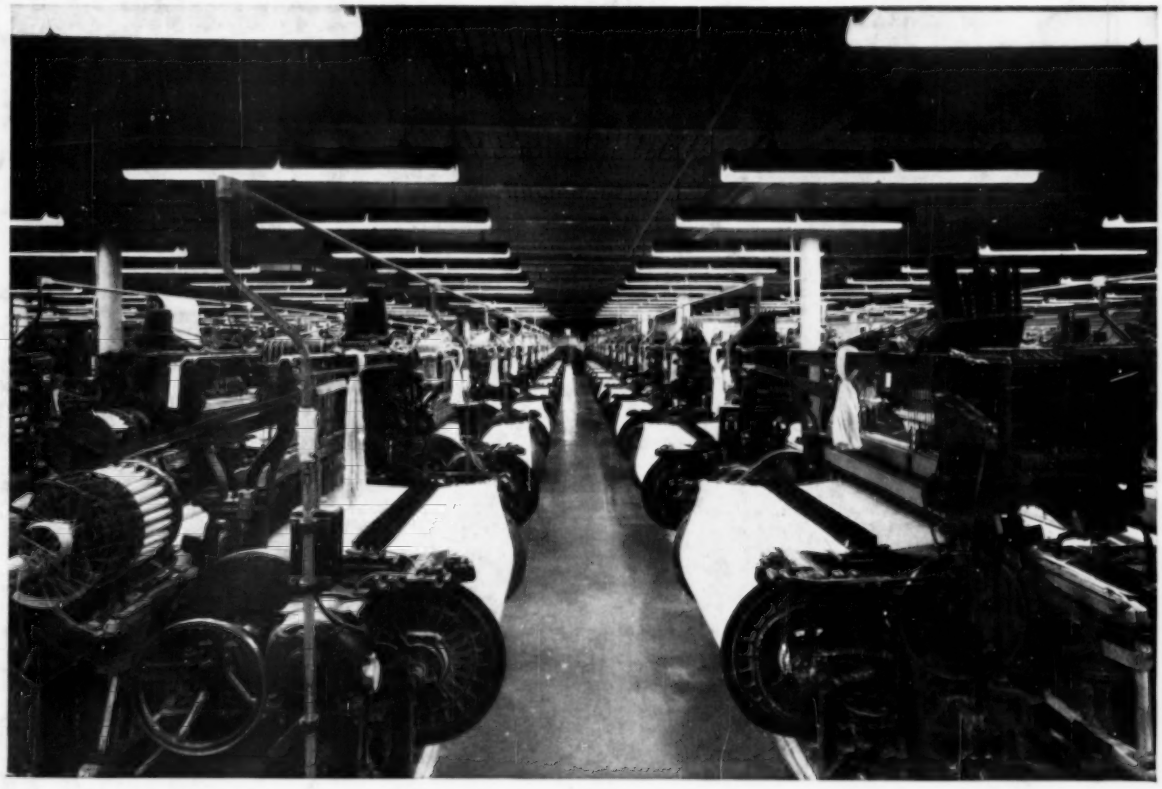

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